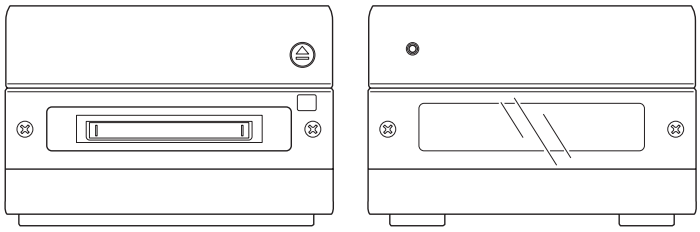
aiwa SERVICE

XR-MD201 EZ(S)
XR-MD200 K(S)



SERVICE MANUAL

MD/CD STEREO SYSTEM

- BASIC MD MECHANISM : 7ZG-9B
- BASIC CD MECHANISM : KSM-620AAA

SYSTEM	RECEIVER	MD/CD	SPEAKER
XR-MD201	RX-LMD201	FD-LMD201	SX-LM200
XR-MD200	RX-LMD200	FD-LMD200	SX-LM200

aiwa

S/M Code No. 09-995-329-3R1

TABLE OF CONTENTS

SPECIFICATIONS 3, 4
ACCESSORIES/PACKAGE LIST 3
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING/
Precaution to replace Optical block 5
DISASSEMBLY INSTRUCTIONS 6-9

MODEL NO. RX-LMD200/LMD201
ELECTRICAL MAIN PARTS LIST 10-12
TRANSISTOR ILLUSTRATION 12
BLOCK DIAGRAM 13, 14
WIRING-1 (POWER AMP) 15, 16
SCHEMATIC DIAGRAM-1 (POWER AMP) 17, 18
WIRING-2 (FRONT) 19, 20
SCHEMATIC DIAGRAM-2 (FRONT) 21, 22
WIRING-3 (TUNER) 23, 24
SCHEMATIC DIAGRAM-3 (TUNER) 25, 26
ELECTRICAL ADJUSTMENT 27, 28
PRACTICAL SERVICE FIGURE 28
IC DESCRIPTION 29, 30
IC BLOCK DIAGRAM 31
FL GRID ASSIGNMENT/ANODE CONNECTION 32
MECHANICAL EXPLODED VIEW 1/1 33
MECHANICAL PARTS LIST 1/1 34

MODEL NO. FM-LMD200/LMD201
ELECTRICAL MAIN PARTS LIST 35-38
TRANSISTOR ILLUSTRATION 38
BLOCK DIAGRAM-1 (CD) 39, 40
BLOCK DIAGRAM-2 (MD) 41, 42
WIRING-1 (CD) 43-46
SCHEMATIC DIAGRAM-1 (CD 1/2) 47, 48
SCHEMATIC DIAGRAM-2 (CD 2/2) 49, 50
WIRING-2 (FUNCTION) 51, 52
SCHEMATIC DIAGRAM-3 (FUNCTION) 53, 54
WIRING-3 (MD) 55, 56
SCHEMATIC DIAGRAM-4 (MD) 57, 58
WIRING-4 (MECHANISM) 59
TEST MODE 60-64
ELECTRICAL ADJUSTMENT 65
IC DESCRIPTION 66-79
IC BLOCK DIAGRAM 80-83
MECHANICAL EXPLODED VIEW 1/1 84
MECHANICAL PARTS LIST 1/1 85

CD MECHANISM EXPLODED VIEW 1/1 86
CD MECHANISM PARTS LIST 1/1 86
MD MECHANISM EXPLODED VIEW 1/3 87
MD MECHANISM PARTS LIST 1/3 87
MD MECHANISM EXPLODED VIEW 2/3 88
MD MECHANISM PARTS LIST 2/3 89
MD MECHANISM EXPLODED VIEW 3/3 90
MD MECHANISM PARTS LIST 3/3 91

MODEL NO. SX-LMD200
SPEAKER DISASSEMBLY INSTRUCTIONS 92
SPEAKER PARTS LIST 1/1 93

SPECIFICATIONS

K MODEL

STEREO RECEIVER RX-LMD200

FM tuner section

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

MW tuner section

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

LW tuner section

Tuning range	144 kHz to 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

Amplifier section

Power output	Rated: 16 W + 16 W (6 ohms, T.H.D. 1%, 1kHz/DIN 45500) Reference: 20 W + 20 W (6 ohms, T.H.D. 10%, 1kHz/DIN 45324) DIN MUSIC POWER 30 W + 30 W
Outputs	SUPER WOOFER: 1.2 V SPEAKERS: accept speakers of 6 ohms or more PHONES (stereo minijack): accepts headphones of 32 ohms or more

General

Power requirements	230 V AC, 50 Hz
Power consumption	56 W
Standby power consumption	2.5 W (power economizing mode set to ON)
Dimensions (W × H × D)	144 × 100 × 206.5 mm
Weight	2.7 kg

STEREO MD RECORDER/COMPACTDISC PLAYER FM-LMD200

Compact disc player section

Laser	Semiconductor laser (λ = 780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

MD recorder section

Scanning method	Non-contact optical scanner (Semiconductor laser application)
Recording system	Magnetic polarity modulation overwrite system
Rotation speed	Approx. 400 - 900 rpm (CLV)
Sampling frequency	44.1 kHz
No. of channels	Stereo: 2 channels Monaural: 1 channel
A-D, D-A converter	1-bit
Frequency	20 - 20000 Hz +0.2 - –1.5 dB
Wow and flutter	Unmeasurable

General

Inputs	TAPE IN: 470 mV AUX IN: 400 mV DIGITAL IN
Output	LINE OUT: 400 mV
Dimensions (W × H × D)	144 × 100.6 × 203 mm
Weight	1.5 kg

SPEAKER SYSTEM SX-LM200

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer: 100 mm cone type Tweeter: 25 mm balanced dome type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W × H × D)	120 × 200 × 182 mm
Weight	1.6 kg

- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
  "DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- The word "BBE" and the "BBE symbol" are trademarks of BBE Sound,Inc.
  Under license from BBE Sound,Inc.

ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-CL1-905-010		IB,K(E)I<200KS>
1	8Z-CL1-906-010		IB,EZ(9L)I<201EZS>
2	8Z-CL1-950-010		RC UNIT,ZCL-1
3	87-A90-118-010		ANT,WIRE FM (Z)
4	87-A90-030-010		ANT,LOOP AM-NC C

STEREO RECEIVER RX-LMD201

FM tuner section

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

MW tuner section

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

LW tuner section

Tuning range	144 kHz to 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

Amplifier section

Power output	Rated: 16 W + 16 W (6 ohms, T.H.D. 1%, 1kHz/DIN 45500) Reference: 20 W + 20 W (6 ohms, T.H.D. 10%, 1kHz/DIN 45324) DIN MUSIC POWER 30 W + 30 W
Outputs	SUPER WOOFER: 1.2 V SPEAKERS: accept speakers of 6 ohms or more PHONES (stereo minijack): accepts headphones of 32 ohms or more

General

Power requirements	230 V AC, 50 Hz
Power consumption	56 W
Standby power consumption	2.5 W (power economizing mode set to ON)
Dimensions (W × H × D)	144 × 100 × 206.5 mm
Weight	2.7 kg

STEREO MD RECORDER/COMPACT DISC PLAYER FM-LMD201

Compact disc player section

Laser	Semiconductor laser (λ = 780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05 % (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

MD recorder section

Scanning method	Non-contact optical scanner (Semiconductor laser application)
Recording system	Magnetic polarity modulation overwrite system
Rotation speed	Approx. 400 – 900 rpm (CLV)
Sampling frequency	44.1 kHz
No. of channels	Stereo: 2 channels Monaural: 1 channel
A-D, D-A converter	1-bit
Frequency	20 – 20000 Hz $^{+0.2}_{-1.5}$ dB
Wow and flutter	Unmeasurable

General

Inputs	TAPE IN: 470 mV AUX IN: 400 mV DIGITAL IN
Output	LINE OUT: 400 mV
Dimensions (W × H × D)	144 × 100.6 × 203 mm
Weight	1.5 kg

SPEAKER SYSTEM SX-SML200

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer: 100 mm cone type Tweeter: 25 mm balanced dome type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W × H × D)	120 × 200 × 182 mm
Weight	1.6 kg

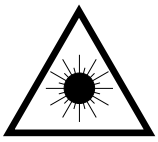
- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
  "DOLBY" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories Licensing Corporation.
- The word "BBE" and the "BBE symbol" are trademarks of BBE Sound,Inc.
  Under license from BBE Sound,Inc.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

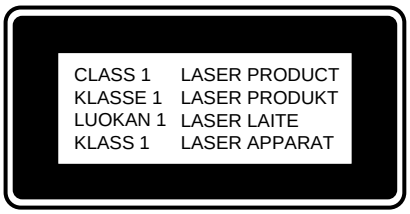
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

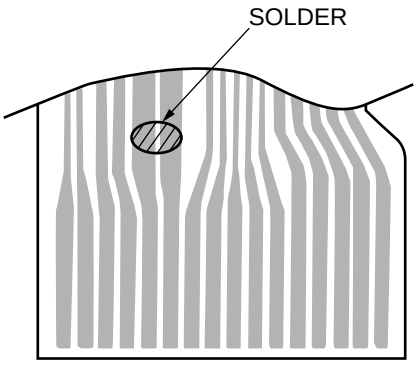
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



Precaution to replace Optical block (KSM-620AAA)

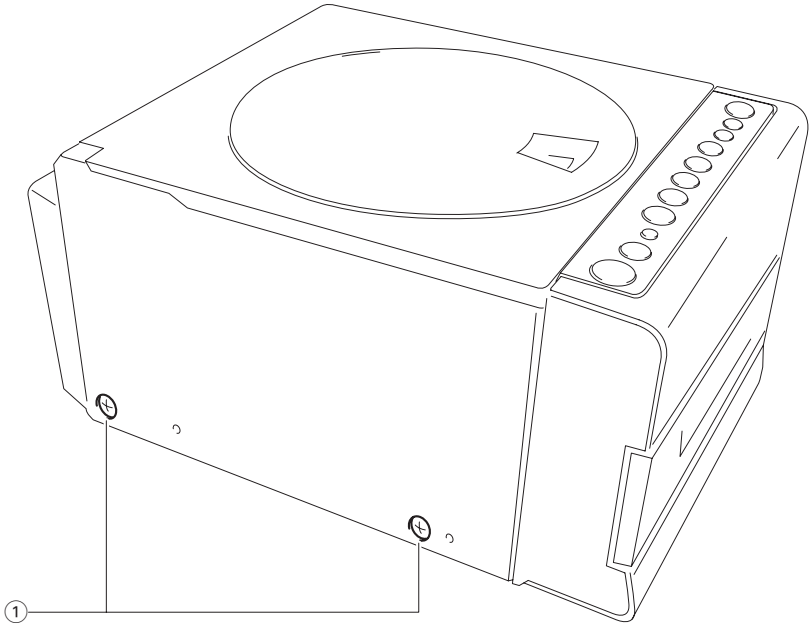
Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.

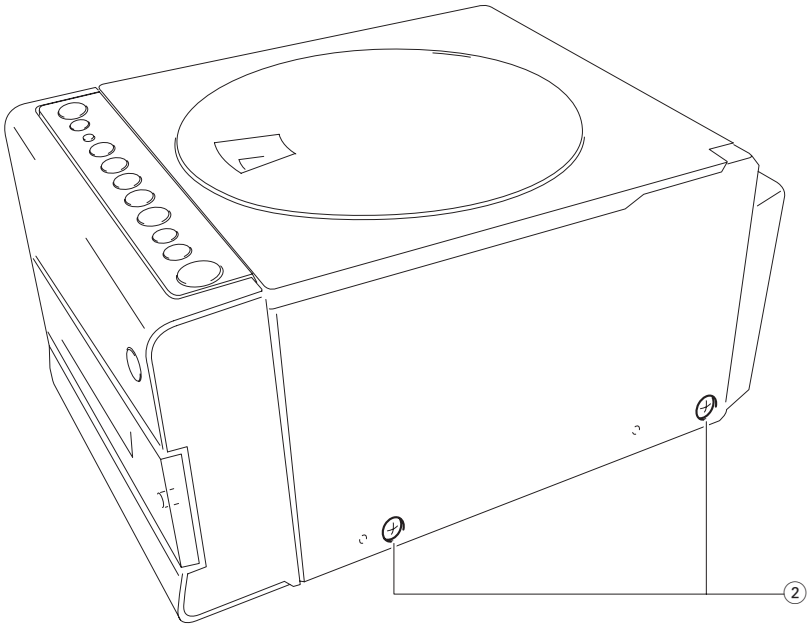


DISASSEMBLY INSTRUCTIONS

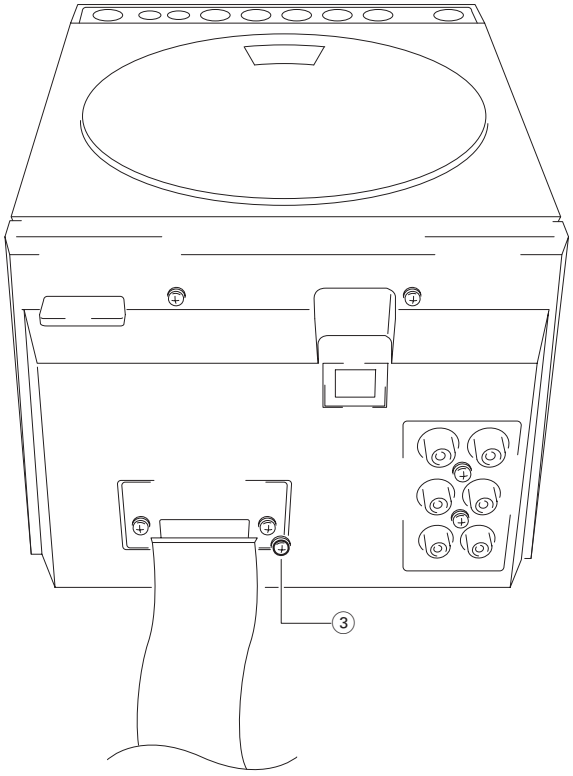
1. Remove the two screws.



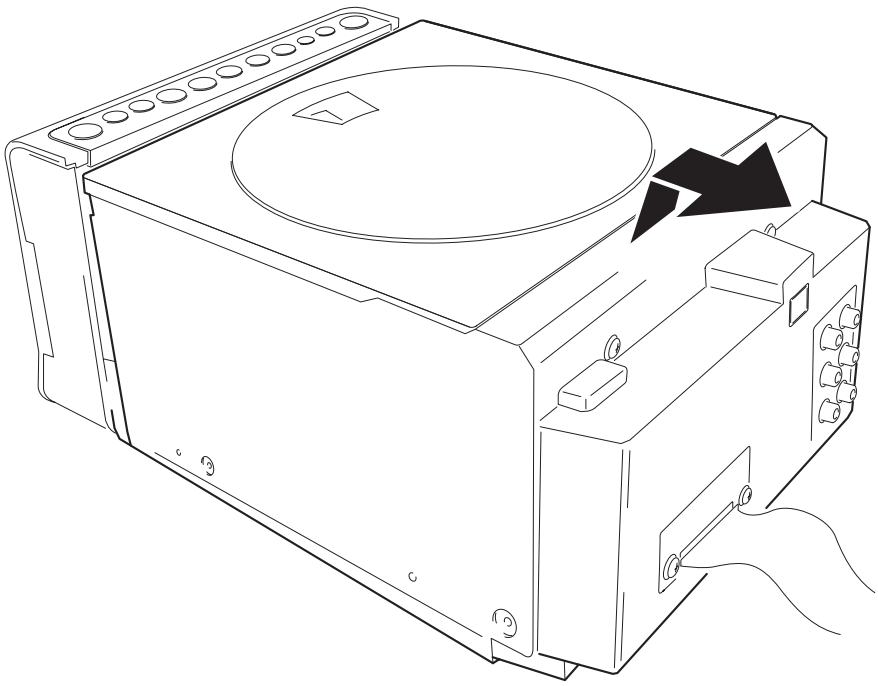
2. Remove the two screws.



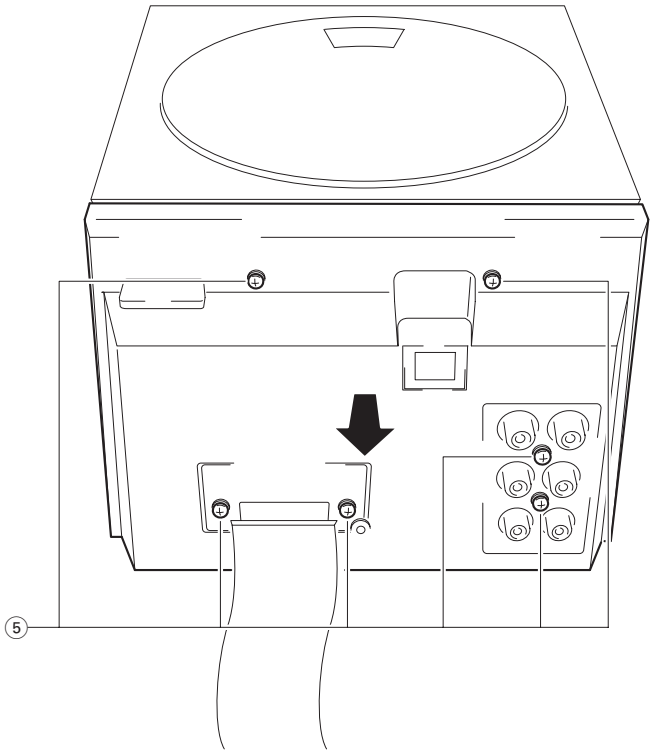
3. Remove the screw.



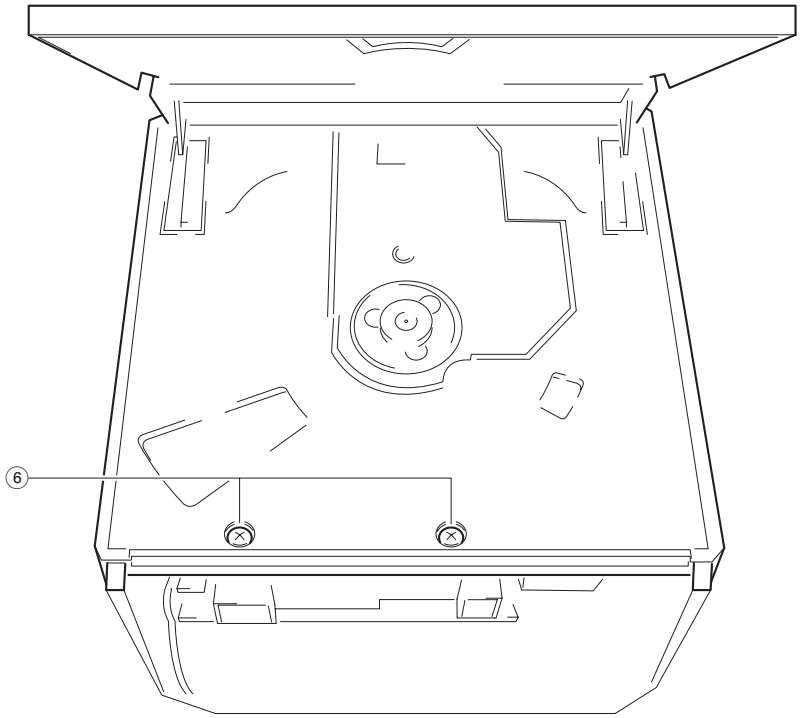
4. While moving up the rear in the direction as shown, remove the PANEL, TOP together with the entire CD MECA.



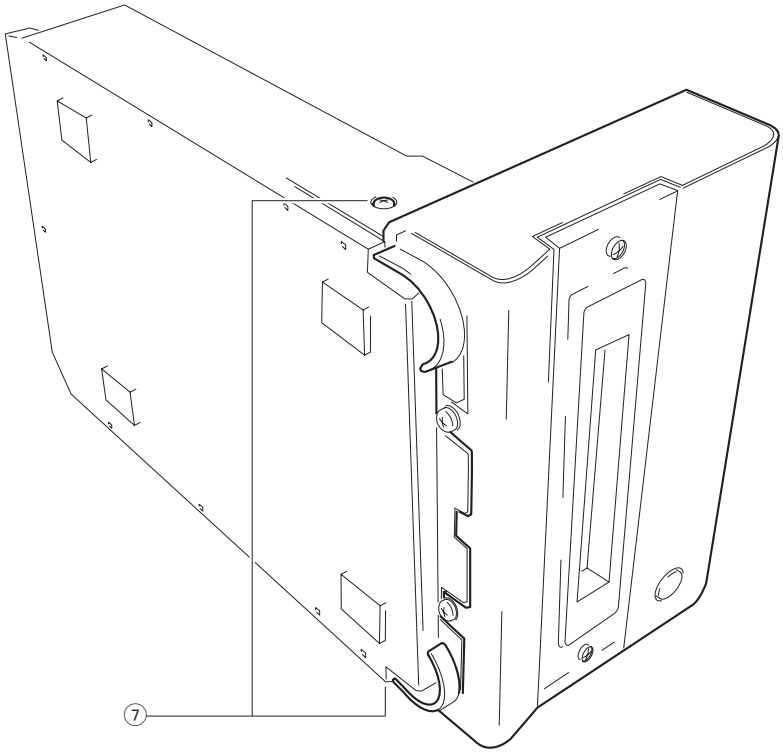
5. Remove the seven screws and remove the PANEL, REAR FD.



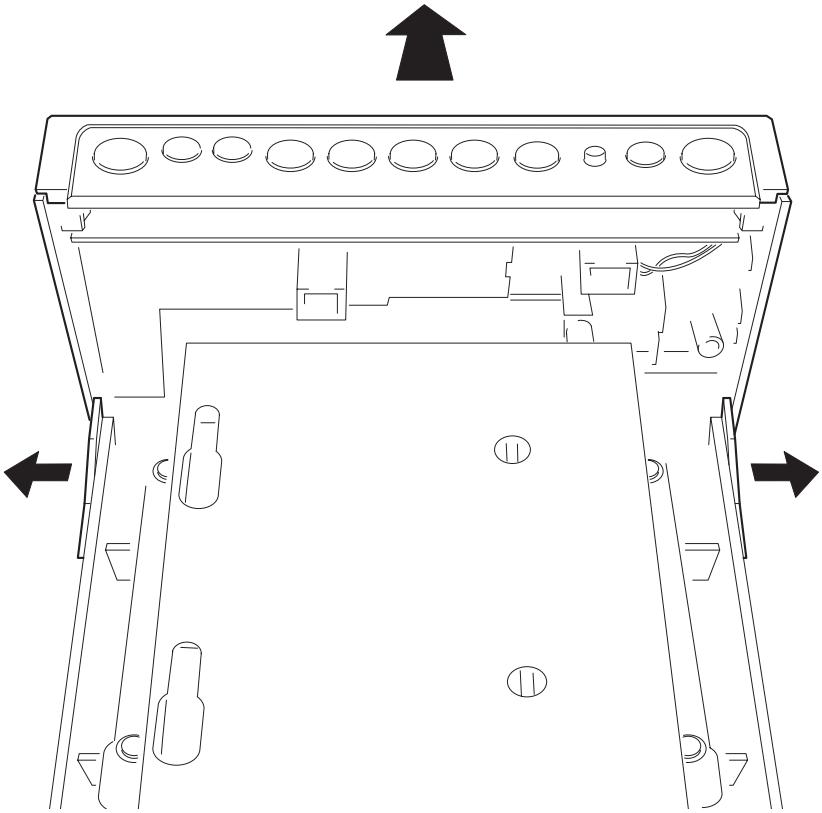
6. The CD MECA can be removed when the two screws are removed.



7. Remove the seven screws.



8. The CABI, FR FD can be removed when the claws on both sides are removed and are pulled to the front.



MODEL NO. RX-LMD200/LMD201

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-070-127-110		IC,LC72131 D
	87-A20-913-010		IC,LA1837NL
	8Z-CL1-627-010		IC,LC866532A-5L31RX
	87-A20-440-040		C-IC,BU1920FS<EZ>
TRANSISTOR			
	89-213-702-010		TR,2SB1370 (1.8W)
	87-026-610-080		TR,KTC3198GR
	87-A30-076-080		C-TR,2SC3052F
	87-A30-075-080		C-TR,2SA1235F
	87-A30-234-080		TR,CSC4115BC
	87-026-609-080		TR,KTA1266GR
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-190-080		TR,CC5551
	87-A30-307-010		TR,2SD2619
	87-A30-306-010		TR,2SB1677
	87-A30-119-040		C-TR,2SC3906K R
	87-A30-047-080		TR,CSD655E
	87-A30-107-070		C-TR,CMBT5401
	87-A30-074-080		C-TR,RT1P 141C
	87-A30-071-080		C-TR,RT1N 144C
	87-A30-087-080		C-FET,2SK2158
	87-A30-072-080		C-TR,RT1P 144C
	89-327-143-080		TR,2SC2714 (0.1W)
	89-505-434-540		C-FET,2SK543(4/5)
	87-A30-086-070		C-TR,CSD1306E
DIODE			
	87-070-345-080		DIODE,IN4148
	87-070-178-090		DIODE,1N5402-BD54
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-345-080		ZENER,MTZJ10C
	87-A40-269-080		C-DIODE,MC2836
	87-A40-270-080		C-DIODE,MC2838
	87-A40-004-080		ZENER,MTZJ16A
	87-A40-312-080		ZENER,DZ33M
	87-A40-313-080		C-DIODE,MC 2840
	87-A40-488-080		DIODE,1SS244
	87-A40-509-080		ZENER,MTZJ6.8C
	87-017-149-080		ZENER,HZS6A2L
	87-020-465-080		DIODE,1SS133 (110MA)
MAIN C.B			
C101	87-010-387-080		CAP,E 470-25 SME
C102	87-016-051-090		CAP,E 2200-35 SMG
C103	87-016-051-090		CAP,E 2200-35 SMG
C106	87-010-196-080		CHIP CAPACITOR,0.1-25
C107	87-010-196-080		CHIP CAPACITOR,0.1-25
C108	87-010-196-080		CHIP CAPACITOR,0.1-25
C109	87-010-196-080		CHIP CAPACITOR,0.1-25
C110	87-010-928-090		CAP,E 4700-25 SMG
C111	87-012-140-080		CAP 470P
C113	87-010-247-080		CAP, ELECT 100-50V
C114	87-010-112-080		CAP, ELECT 100-16V
C115	87-010-235-080		CAP,E 470-16 SME
C132	87-010-260-080		CAP, ELECT 47-25V
C133	87-010-403-080		CAP, ELECT 3.3-50V
C151	87-010-196-080		CHIP CAPACITOR,0.1-25
C152	87-A11-174-090		CAP,E 4700-16 M SMG
C171	87-010-260-080		CAP, ELECT 47-25V
C172	87-010-260-080		CAP, ELECT 47-25V
C173	87-010-260-080		CAP, ELECT 47-25V
C174	87-010-260-080		CAP, ELECT 47-25V
C175	87-010-247-080		CAP, ELECT 100-50V
C176	87-010-263-080		CAP, ELECT 100-10V
C182	87-010-322-080		C-CAP,S 100P-50 J CH
C183	87-010-322-080		C-CAP,S 100P-50 J CH
C184	87-010-322-080		C-CAP,S 100P-50 J CH
C185	87-010-322-080		C-CAP,S 100P-50 J CH
C186	87-010-322-080		C-CAP,S 100P-50 J CH
C187	87-010-322-080		C-CAP,S 100P-50 J CH
C191	87-A10-479-080		CAP,CER 2200P-250 M E KH
C195	87-010-405-080		CAP, ELECT 10-50V
C281	87-010-401-080		CAP, ELECT 1-50V
C282	87-010-263-080		CAP, ELECT 100-10V
C283	87-010-380-080		CAP, ELECT 47-16V
C284	87-010-405-080		CAP, ELECT 10-50V
CN101	87-A60-813-010		CONN,8P H BLK TAC-L8X
CN102	87-A60-813-010		CONN,8P H BLK TAC-L8X
CN104	87-A60-770-010		CONN,18P B TMC-D(X)
CN114	87-099-570-010		CONN,13P TUC-P13P-B1<K>
CN203	87-A60-109-010		CONN,2P V S2M-2W
CN301	87-A60-778-010		CONN,18P B TMC-D(P)
CN302	87-A60-058-010		CONN,10P V 9604S-10C
CN305	8Z-CL1-665-010		CONN ASSY,5P FR
J201	87-A60-420-010		JACK,3.5 ST (MSC)
J202	87-099-801-010		JACK,PIN 1P BLK
J501	87-A60-782-010		CONN,19P H FG
W101	8Z-CL1-656-010		F-CABLE,7P 2.5 150MM PWR
W102	8Z-CL1-654-010		F-CABLE,2P 2.5 170MM SUBPT
W103	8Z-CL1-655-010		F-CABLE,4P 2.5 100MM PWR
WH102	87-A90-460-010		HLDR,WIRE 2.5-7P
FRONT C.B			
C301	87-012-145-080		CAP, CHIP S 270P CH
C303	87-010-312-080		C-CAP,S 15P-50 CH
C304	87-015-785-080		CHIP CAPACITOR, 0.1FZ-25Z
C305	87-010-196-080		CHIP CAPACITOR,0.1-25
C341	87-010-493-080		CAP,E 0.47-50 GAS
C342	87-A10-189-040		CAP,E 220-10
C343	87-010-196-080		CHIP CAPACITOR,0.1-25
C347	87-010-405-080		CAP, ELECT 10-50V
C351	87-010-194-080		CAP, CHIP 0.047
C352	87-010-194-080		CAP, CHIP 0.047
C358	87-010-263-080		CAP, ELECT 100-10V
C371	87-010-404-080		CAP, ELECT 4.7-50V
C372	87-010-404-080		CAP, ELECT 4.7-50V
C373	87-010-408-080		CAP, ELECT 47-50V
FL301	8Z-CL1-630-010		FL,13-ST-36GNAK
HL301	8Z-CL1-204-010		HLDR,FL
L301	87-A50-052-010		COIL,CLOCK 5.76MHZ T1
LED361	87-A40-568-010		LED,L-13HD RED
POWER AMP C.B			
C201	87-010-260-080		CAP, ELECT 47-25V
C202	87-010-260-080		CAP, ELECT 47-25V
C203	87-A10-946-080		C-CAP,S 220P-100 J CH
C204	87-A10-946-080		C-CAP,S 220P-100 J CH
C209	87-010-186-080		CAP,CHIP 4700P
C210	87-010-186-080		CAP,CHIP 4700P
C211	87-012-368-080		C-CAP,S 0.1-50 F
C212	87-012-368-080		C-CAP,S 0.1-50 F
C213	87-010-195-080		C-CAP,S 0.068-25 F
C214	87-010-195-080		C-CAP,S 0.068-25 F
C215	87-010-544-080		CAP, ELECT 0.1-50V
C216	87-010-544-080		CAP, ELECT 0.1-50V
C217	87-010-182-080		C-CAP,S 2200P-50 B
C218	87-010-182-080		C-CAP,S 2200P-50 B
C219	87-010-184-080		C-CAP,S 3300P-50 B
C220	87-010-184-080		C-CAP,S 3300P-50 B
C221	87-010-186-080		CAP,CHIP 4700P
C222	87-010-186-080		CAP,CHIP 4700P
C223	87-010-403-080		CAP, ELECT 3.3-50V
C224	87-010-403-080		CAP, ELECT 3.3-50V

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C225	87-012-157-080		C-CAP,S 330P-50 J CH
C226	87-012-157-080		C-CAP,S 330P-50 J CH
C265	87-010-546-080		CAP, ELECT 0.33-50V
C266	87-010-546-080		CAP, ELECT 0.33-50V
C271	87-015-819-080		CAPACITOR,0.01
C277	87-010-197-080		CAP, CHIP 0.01 DM
CN201	87-A60-812-010		CONN,8P V BLK TAC-L8P
CN202	87-A60-812-010		CONN,8P V BLK TAC-L8P
J203	87-YP6-608-010		TERMINAL,SPKR 4P
L201	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
R215	87-A00-258-080		RES,M/F 0.22-1W J
R216	87-A00-258-080		RES,M/F 0.22-1W J
R217	87-A00-258-080		RES,M/F 0.22-1W J
R218	87-A00-258-080		RES,M/F 0.22-1W J
R219	87-A00-258-080		RES,M/F 0.22-1W J
R220	87-A00-258-080		RES,M/F 0.22-1W J
TH201	87-A91-042-080		C-THMS,100K 55001
TH202	87-A91-042-080		C-THMS,100K 55001
MAIN PT C.B			
⚠PR103	87-026-681-080		PROTECTOR,5A 60V 491
⚠PR104	87-026-681-080		PROTECTOR,5A 60V 491
⚠PR151	87-A90-094-080		PROTECTOR,4A 491SERIES 60V
⚠PT101	8Z-CL1-623-010		PT,E
RY102	87-A90-976-010		RELAY,AC12V SDT-S-112LMR
⚠T101	87-A60-317-010		TERMINAL, 1P MSC
⚠T102	87-A60-317-010		TERMINAL, 1P MSC
WH101	87-A90-460-010		HLDR,WIRE 2.5-7P
SUB PT C.B			
⚠PT102	8Z-CL1-673-010		PT,SUB ZCL-1(E)
TU INF C.B			
C501	87-010-189-080		C-CAP,S 8200P-50 B
C502	87-010-189-080		C-CAP,S 8200P-50 B
CN115	87-A60-114-010		CONN,4P H S2M-4WR
CN116	87-A60-077-010		CONN,10P H 9604S-10F
CN117	87-A60-189-010		CONN,16P V TUC-P16P-B1<EZ>
TUNER C.B			
C701	87-010-381-080		CAP, ELECT 330-16V
C702	87-010-404-080		CAP, ELECT 4.7-50V
C703	87-012-286-080		CAP, U 0.01-25
C704	87-012-286-080		CAP, U 0.01-25
C709	87-012-195-080		C-CAP,U 100P-50CH
C711	87-010-260-080		CAP, ELECT 47-25V
C712	87-010-831-080		C-CAP,U,0.1-16F
C713	87-012-286-080		CAP, U 0.01-25
C714	87-012-286-080		CAP, U 0.01-25
C715	87-012-195-080		C-CAP,U 100P-50CH
C717	87-012-286-080		CAP, U 0.01-25
C719	87-012-286-080		CAP, U 0.01-25
C720	87-012-195-080		C-CAP,U 100P-50CH
C721	87-012-176-080		CAP 15P
C722	87-012-176-080		CAP 15P
C723	87-012-274-080		CHIP CAP,U 1000P-50B
C725	87-018-131-080		CAP, CER 1000P-50V
C727	87-010-196-080		CHIP CAPACITOR,0.1-25
C728	87-010-248-080		CAP, ELECT 220-10V
C729	87-012-274-080		CHIP CAP,U 1000P-50B
C731	87-012-286-080		CAP, U 0.01-25
C733	87-012-280-080		CAP, U 3300P-50
C734	87-012-280-080		CAP, U 3300P-50
C752	87-012-282-080		CAP, U 4700P-50
C753	87-012-195-080		C-CAP,U 100P-50CH

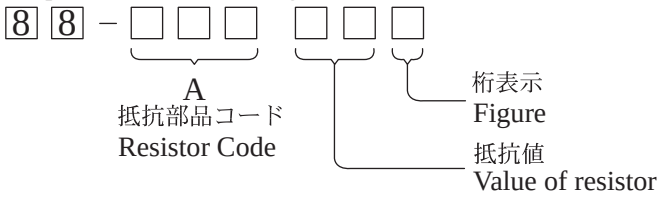
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C755	87-012-286-080		CAP, U 0.01-25
C756	87-012-286-080		CAP, U 0.01-25
C757	87-012-188-080		C-CAP,U 47P-50 CH
C758	87-012-167-080		C-CAP,U 5P-50 CH
C761	87-010-196-080		CHIP CAPACITOR,0.1-25
C762	87-012-286-080		CAP, U 0.01-25
C763	87-010-829-080		CAP, U 0.047-16
C765	87-012-286-080		CAP, U 0.01-25
C766	87-010-197-080		CAP, CHIP 0.01 DM
C768	87-012-286-080		CAP, U 0.01-25
C769	87-010-260-080		CAP, ELECT 47-25V
C770	87-010-829-080		CAP, U 0.047-16
C771	87-010-383-080		CAP, ELECT 33-25V
C772	87-010-829-080		CAP, U 0.047-16
C773	87-010-196-080		CHIP CAPACITOR,0.1-25
C774	87-010-263-080		CAP, ELECT 100-10V
C775	87-010-404-080		CAP, ELECT 4.7-50V
C776	87-012-286-080		CAP, U 0.01-25
C777	87-010-493-080		CAP,E 0.47-50 GAS
C778	87-010-401-080		CAP, ELECT 1-50V
C779	87-010-401-080		CAP, ELECT 1-50V
C780	87-010-196-080		CHIP CAPACITOR,0.1-25
C781	87-010-405-080		CAP, ELECT 10-50V
C782	87-010-405-080		CAP, ELECT 10-50V
C783	87-012-286-080		CAP, U 0.01-25
C784	87-012-286-080		CAP, U 0.01-25
C785	87-010-405-080		CAP, ELECT 10-50V
C786	87-010-405-080		CAP, ELECT 10-50V
C787	87-012-275-080		C-CAP,U 1200P-50 B
C788	87-012-275-080		C-CAP,U 1200P-50 B
C789	87-012-275-080		C-CAP,U 1200P-50 B
C790	87-012-275-080		C-CAP,U 1200P-50 B
C791	87-010-405-080		CAP, ELECT 10-50V
C793	87-012-273-080		C-CAP,U 820P-50 B
C794	87-010-406-080		CAP, ELECT 22-50
C795	87-010-596-080		CAP, S 0.047-16
C796	87-010-403-080		CAP, ELECT 3.3-50V
C797	87-012-276-080		CAP, CHIP SS 1500 PBK
C798	87-012-276-080		CAP, CHIP SS 1500 PBK
C799	87-010-829-080		CAP, U 0.047-16
C812	87-012-286-080		CAP, U 0.01-25
C814	87-012-286-080		CAP, U 0.01-25
C820	87-010-260-080		CAP, ELECT 47-25V
C821	87-012-286-080		CAP, U 0.01-25
C822	87-012-286-080		CAP, U 0.01-25
C823	87-012-286-080		CAP, U 0.01-25
C828	87-010-196-080		CHIP CAPACITOR,0.1-25
C829	87-010-196-080		CHIP CAPACITOR,0.1-25
C859	87-012-286-080		CAP, U 0.01-25<EZ>
C861	87-012-199-080		CAP 220P<EZ>
C862	87-012-199-080		CAP 220P<EZ>
C863	87-012-270-080		CAP, U 470P-50<EZ>
C864	87-010-405-080		CAP, ELECT 10-50V<EZ>
C865	87-010-196-080		CHIP CAPACITOR,0.1-25<EZ>
C866	87-010-405-080		CAP, ELECT 10-50V<EZ>
C867	87-012-286-080		CAP, U 0.01-25<EZ>
C868	87-012-184-080		C-CAP,U 33P-50 CH<EZ>
C869	87-012-180-080		C-CAP,U 22P-50 CH<EZ>
C940	87-012-286-080		CAP, U 0.01-25
C942	87-012-168-080		C-CAP,U 6P-50 CH
C947	87-012-286-080		CAP, U 0.01-25
C949	87-A10-039-080		C-CAP,U 470P-50 J CH
C952	87-012-286-080		CAP, U 0.01-25
C958	87-010-197-080		CAP, CHIP 0.01 DM
C959	87-010-831-080		C-CAP,U,0.1-16F
C960	87-010-196-080		CHIP CAPACITOR,0.1-25
C962	87-010-401-080		CAP, ELECT 1-50V
CF801	87-008-423-010		CERAMIC FILTER, SFE10.7
CF802	82-785-747-010		CF MS2 GHY R
CN701	87-A60-700-010		CONN,13P H GRY TUC-P13X-C1<K>

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
CN701	87-A60-650-010		CONN,16P H GRY TUC-P16X-C1<EZ>
FFE801	A8-6ZA-191-130		6ZA-1 FEENM
J801	87-033-241-010		TERMINAL,ANT AJ-2039
L771	87-A50-266-010		COIL,FM DET-2N(TOK)
L772	87-A91-110-010		FLTR,PCFJZH-450 (TOK)
L781	87-005-847-080		COIL,2.2UH(CECS)
L791	87-A50-027-010		COIL,1 POLE MPX(TOK)
L792	87-A50-027-010		COIL,1 POLE MPX(TOK)
L832	87-005-847-080		COIL,2.2UH(CECS)
L851	87-005-847-080		COIL,2.2UH(CECS)<EZ>
L941	87-A50-020-010		COIL,ANT LW(COI)
L942	87-A50-019-010		COIL,OSC LW(COI)
L981	8Z-ZA1-665-010		COIL,AM PACK 2(TOK)
TC942	87-011-164-010		CAPACITOR,TRIMMER 30P
X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309
X851	87-A70-091-010		VIB,XTAL 4.332MHZ CSA-309<EZ>

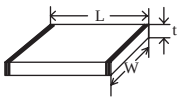
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

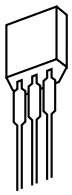
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION

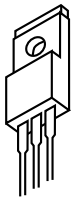


ECB

CSC4115

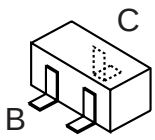
ECB

CC5551
CSD655
KTA1266
KTC3198



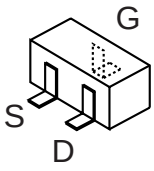
BCE

2SB1370
2SB1677
2SD2619

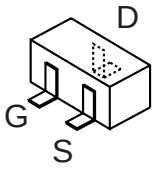


2SA1235
2SC2714
2SC3052
2SC3906
CMBT5401

CSD1306
RT1N141C
RT1N144C
RT1P141C
RT1P144C

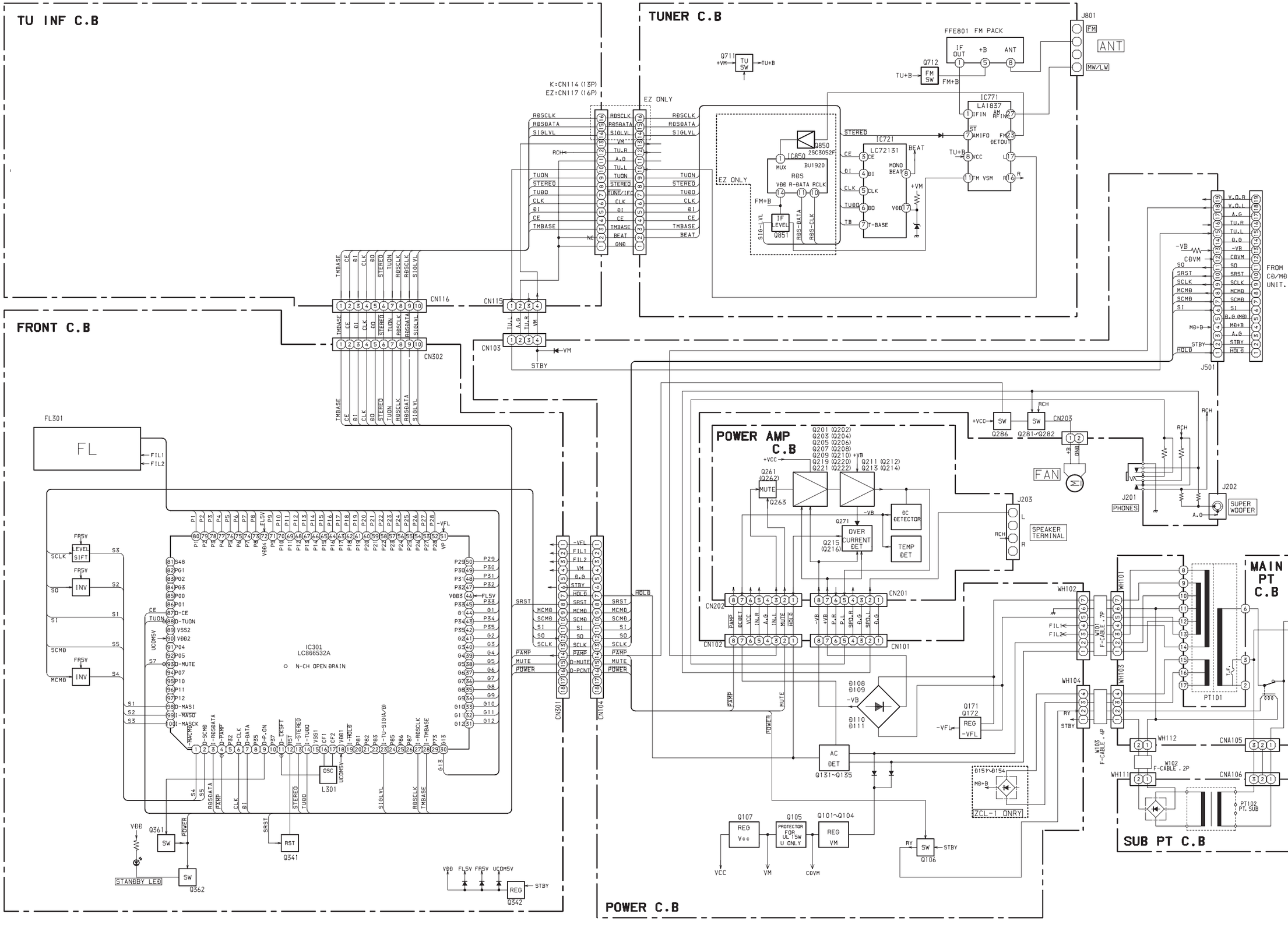


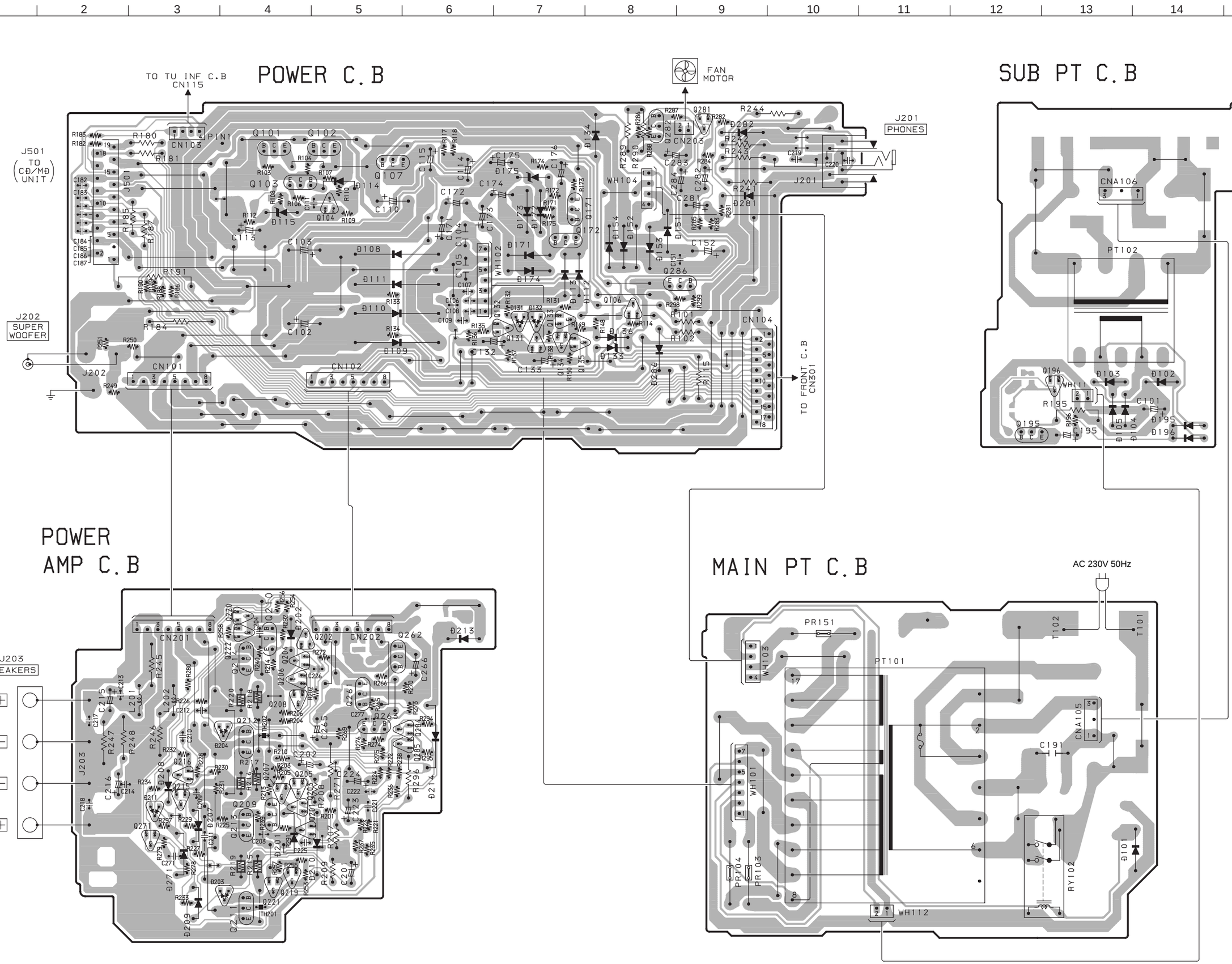
2SK543



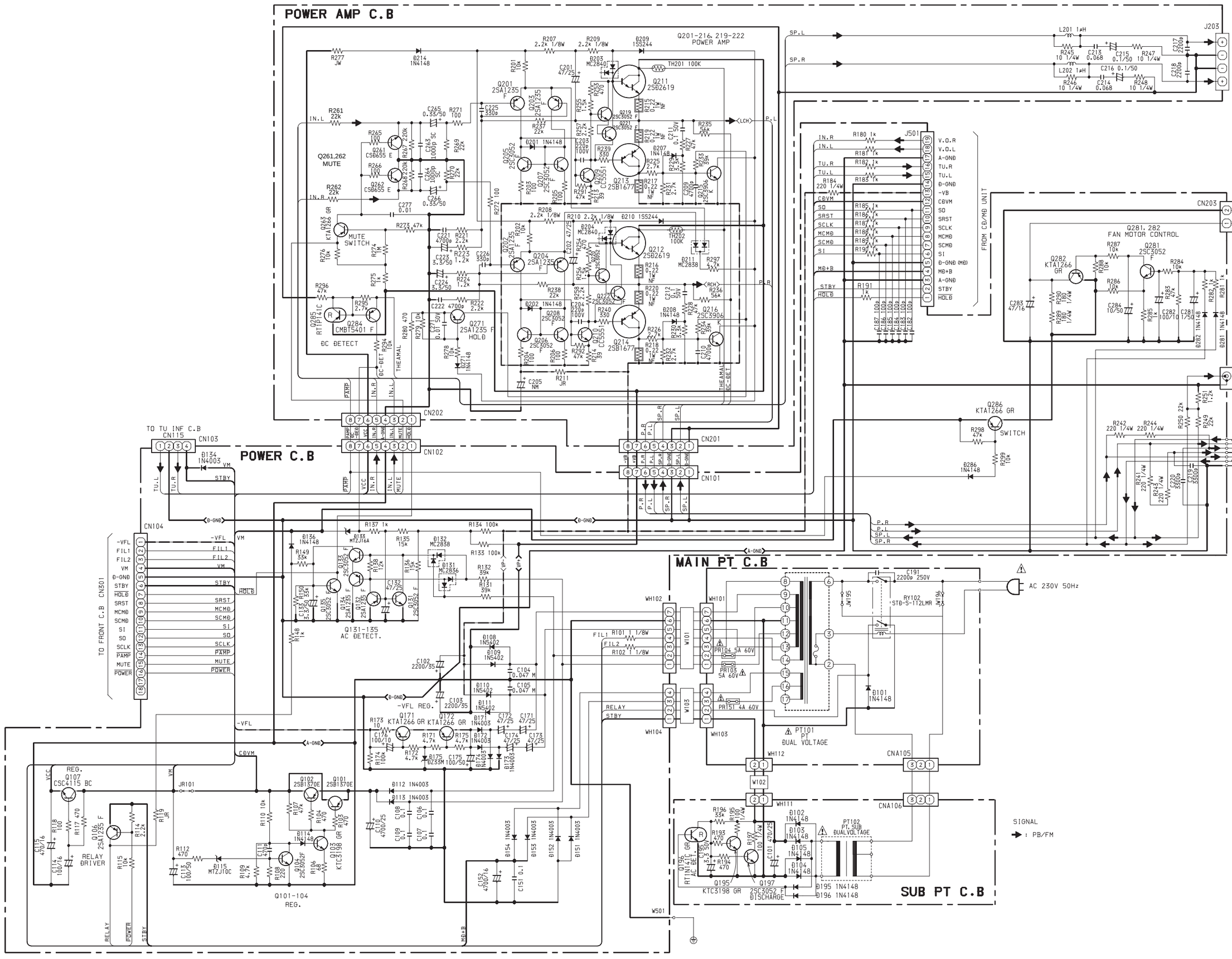
2SK2158

BLOCK DIAGRAM

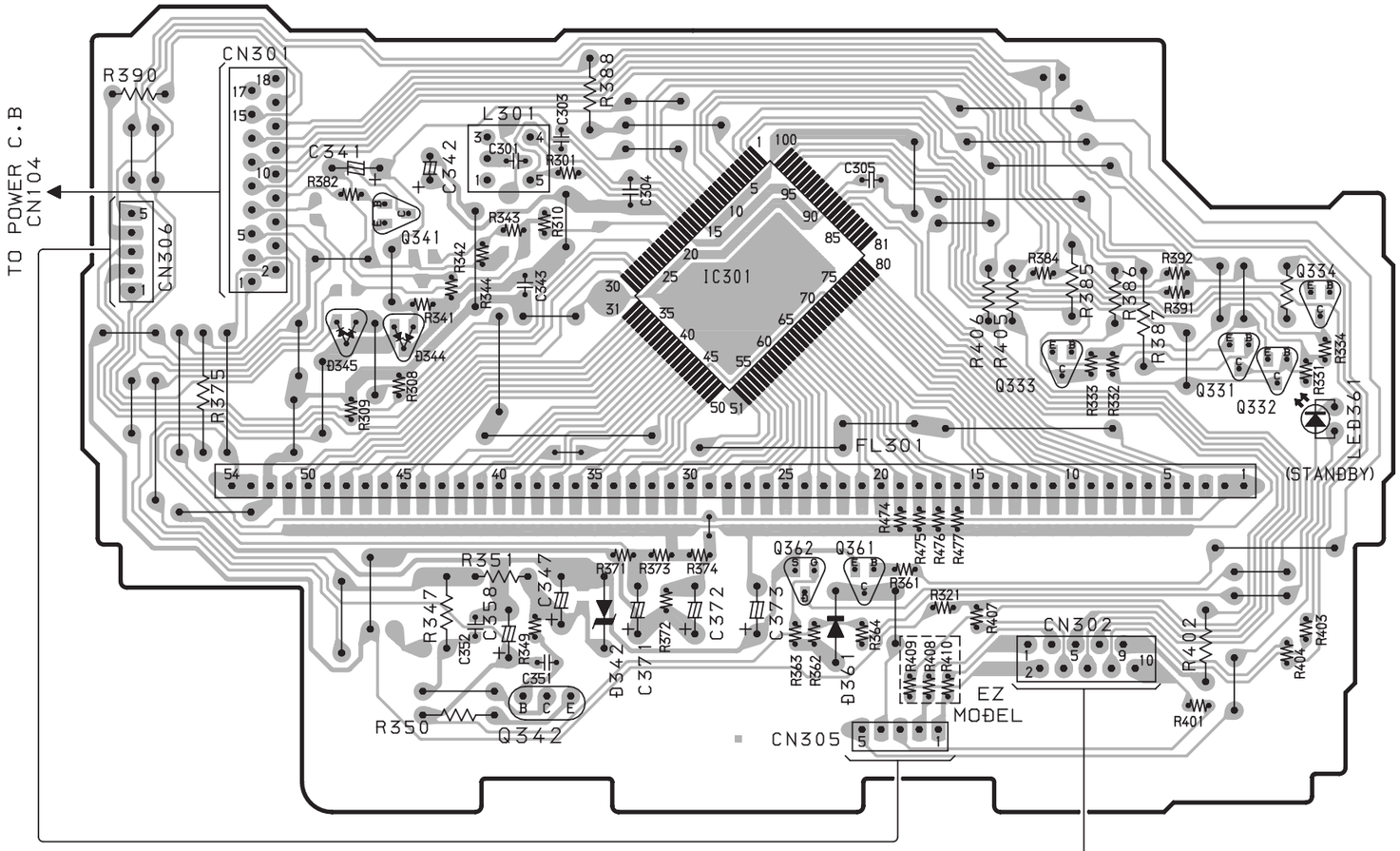


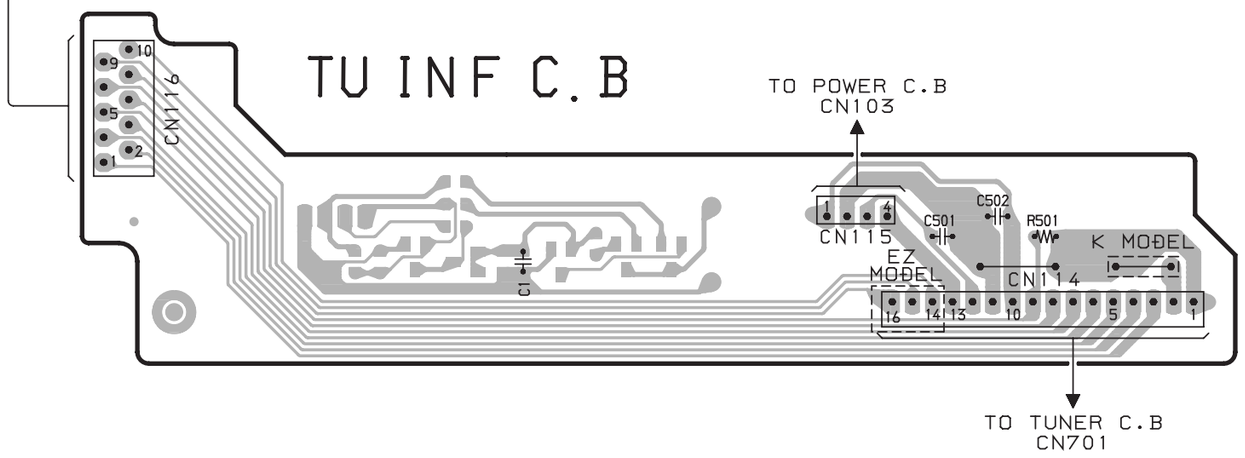

POWER C.B
TO TU INF C.B
CN115
FAN
MOTOR
J501
TO
CD/MD
UNIT
J202
SUPER
WOOFER
J201
PHONES
TO FRONT C.B
CN301
SUB PT C.B
CNA106
PT102
MAIN PT C.B
AC 230V 50Hz
PR151
PT101
WH103
WH101
WH112
CNA105
RY102
POWER
AMP C.B
J203
SPEAKERS
CN201
CN202

SCHEMATIC DIAGRAM-1 (POWER AMP)

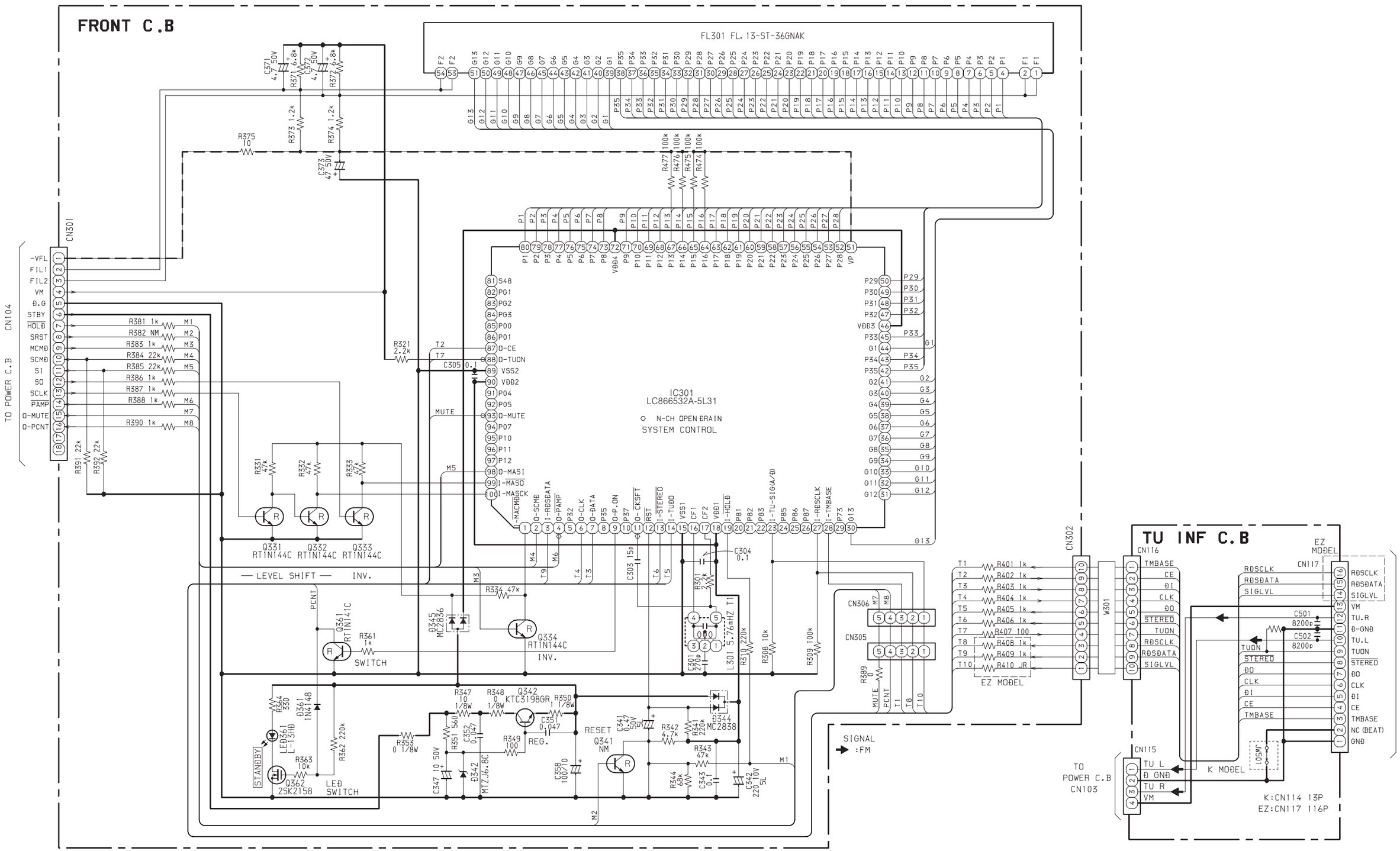


FRONT C.B


TO POWER C.B
CN104
CN306
CN301
R390
R388
L301
C303
C301
R301
C342
C341
R382
Q341
R343
R342
R344
R310
C304
C343
R341
D344
D345
R308
R309
R375
IC301
C305
R384
R385
R387
R392
R391
Q334
Q333
Q331
Q332
R333
R332
R331
R334
LED361
FL301
(STANDBY)
R474
R475
R476
R477
Q362
Q361
R361
R351
R371
R373
R374
C347
C358
C352
R349
C351
R347
Q342
R350
D342
C371
R372
C372
C373
R363
R362
D361
R364
R321
R407
R409
R408
R410
EZ
MODEL
CN305
CN302
R402
R401
R404
R403


TU INF C.B
CN116
C1
TO POWER C.B
CN103
CN115
C502
C501
R501
K MODEL
EZ
MODEL
CN114
TO TUNER C.B
CN701

SCHEMATIC DIAGRAM-2 (FRONT)



TUNER C.B

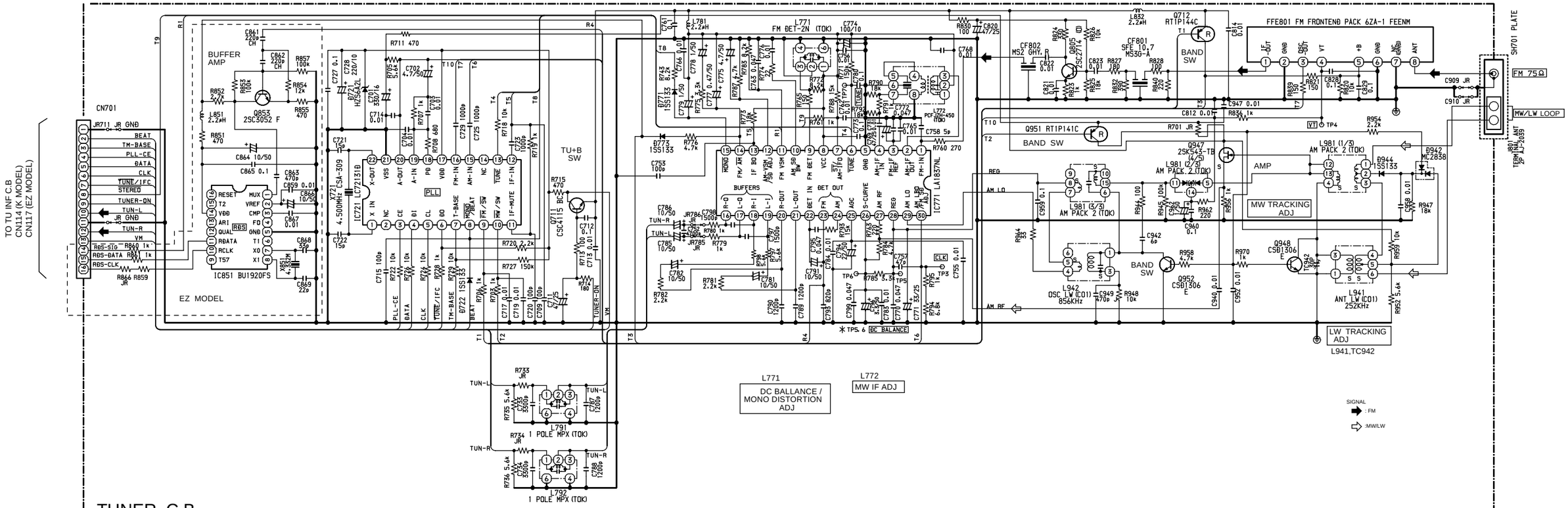
TO TU INF C.B
CN114 (K MODEL)
CN117 (EZ MODEL)

J801
ANTENNA

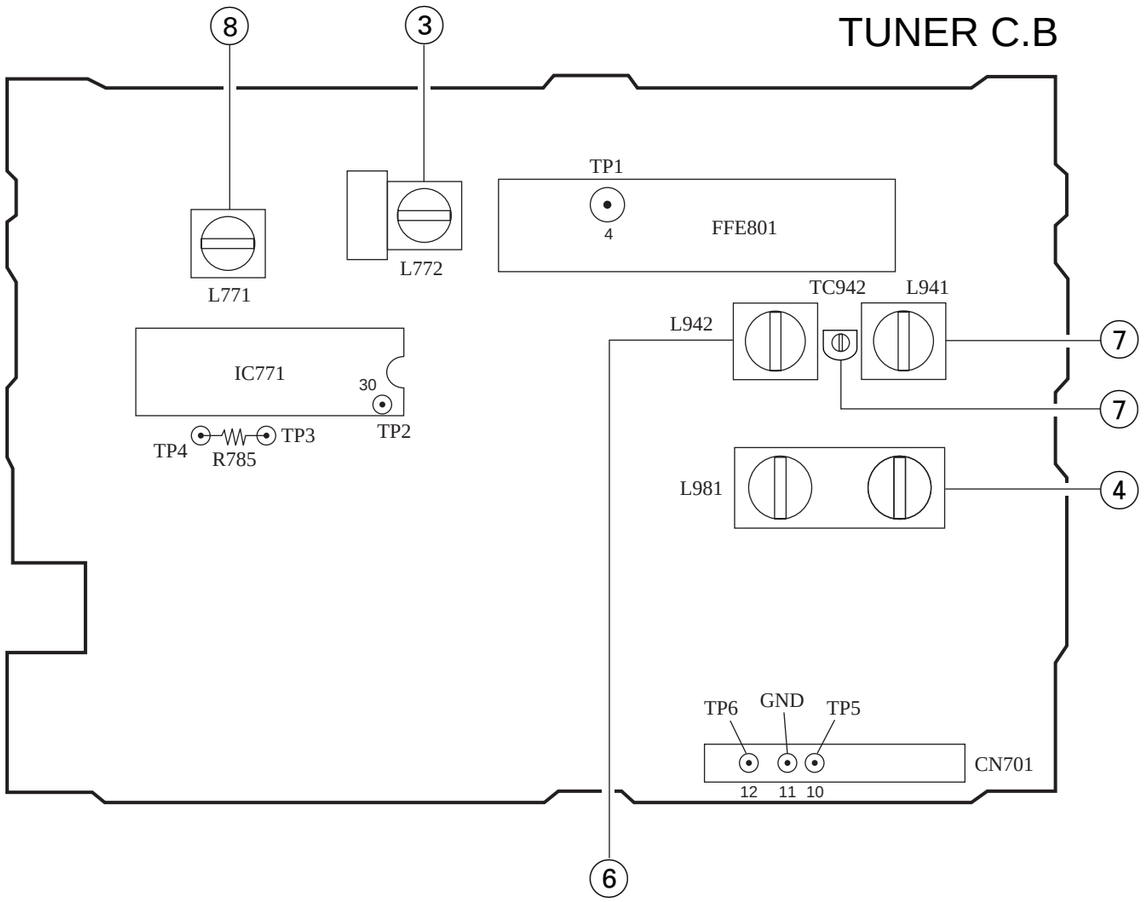
MW / LW LOOP

FM 75Ω

SCHEMATIC DIAGRAM-3 (TUNER)



TUNER C.B



< TUNER SECTION >

1. Clock Frequency Check
   Settings: • Test point: TP2 (CLK IC770 pin30)
   Method: Set to MW 1602kHz and check that the test point becomes 2052kHz±45Hz (EZ).

2. MW VT Check
   Settings: • Test point: TP1 (VT)
   Method: Set to MW 1602kHz and check that the test point is less than 8.0V.
   Then set to MW 531kHz and check that the test point is more than 0.6V.

3. MW IF Adjustment
   Settings: • Test point: TP5, TP6
   L772 ..... 450kHz

4. MW Tracking Adjustment
   Settings: • Test point: TP5, TP6
   • Adjustment location: L981
   Method: Set to MW 999kHz and adjust L981 so that the test point becomes maximum.

5. FM VT Check
   Settings: • Test point: TP1 (VT)
   Method: Set to FM 87.5MHz, 108.0MHz and check that the test point is more than 0.5V (87.5MHz) and less than 8.0V (108.0MHz).

6. LW VT Adjustment
   Settings: • Test point: TP2 (VT)
   • Adjustment location: L942
   Method: Set to LW 144kHz and adjust L942 so that the test point becomes 1.3V±0.05V.
   Then set to LW 290kHz and check that the test point is less than 8.0V.

7. LW Tracking Adjustment
   Settings: • Test point: TP5, TP6
   • Adjustment location:
   L941 ..... 144kHz
   TC942 ..... 290kHz
   Method: Set up TC942 to center before adjustment.
   The level at 144kHz is adjusted to MAX by L941. Then the level at 290kHz is adjusted to MAX by TC942.

8. DC Balance/Mono Distortion Adjustment
   Settings: • Test point: TP3, TP4
   • Adjustment location: L771
   • Input level: 54dB
   Method: Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V±0.04V.
   Next, check that the distortion is less than 1.3%.

< TUNER SECTION >

< FM SECTION >

IHF Sensitiviy: (THD 3%)	Less than 13dB (at 108.0/98.0MHz) Less than 14dB (at 98.0MHz)
Distortion:	Less than 1.2% (98.0MHz)
Stereo separation:	More than 12dB (98.0MHz)
Intermediate frequency:	10.7MHz

< MW SECTION >

Sensitivity: (S/N 20dB)	Less than 60dB (at 600kHz) Less than 58dB (at 1000/1400kHz)
Distortion:	Less than 1.5% (at 1000kHz)

< LW SECTION >

Sensitivity:	Less than 70dB (at 144kHz) Less than 68dB (at 198kHz) Less than 66dB (at 290kHz)

IC DESCRIPTION

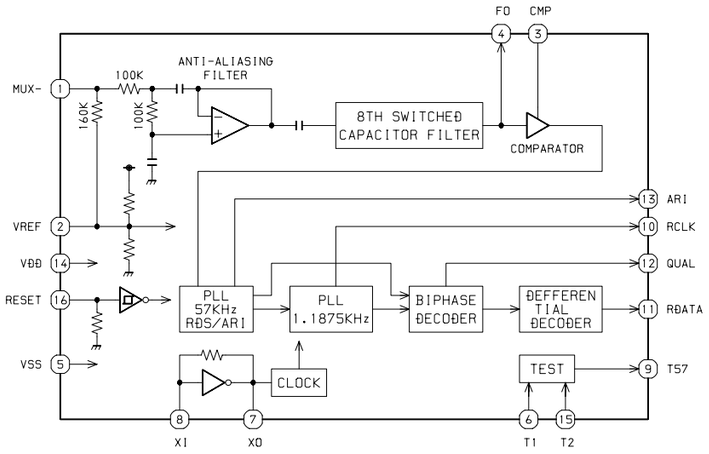
IC, LC866532A-5L31RX

Pin No.	Pin Name	I/O	Description
1	I-$\overline{\text{MACMD}}$	I	Command input from master microprocessor.
2	O-SCMD	O	Serial data output to master microprocessor.
3	1-RDSDATA	I	RDS data input.
4	O-$\overline{\text{PAMP}}$	O	Power supply control output (power supply ON/OFF of POWER AMP).
5	P32	—	NC.
6	O-CLK	O	Connected to TUNER PLL IC LC72131 pin-⑤ CL.
7	O-DATA	O	Connected to TUNER PLL IC LC72131 pin-④ DI.
8	P35	—	NC.
9	O-P.ON	O	Power save mode control output
10	P37	—	NC.
11	O-$\overline{\text{CKSFT}}$	O	Clock shift output. “L” at clock shift.
12	$\overline{\text{RST}}$	I	Microprocessor reset.
13	I-$\overline{\text{STEREO}}$	I	TUNER, STEREO detection.
14	I-TUDO	I	Connected to TUNER PLL IC LC72131 pin-⑥ D0.
15	VSS1	—	GND.
16	CF1	I	5.76 MHz. Connected to oscillator.
17	CF2	O	
18	VDD1	—	Microprocessor power supply (µ-com 5V).
19	I-$\overline{\text{HOLD}}$	I	Hold state detection. (Ignored by slave microprocessor)
20-22	P81-P83	—	NC.
23	I-TU-SIG	I	RDS signal level AD value input (A/D).
24-26	P85-P87	—	NC.
27	I-RDSCLK	I	RDS CLK input.
28	I-TMBASE	I	Reference clock input for watch. Connected to PLL ICLC72131 pin-⑦.
29	P73	—	NC.
30-41	G13-G2	O	FL tube grid output. (13G-2G).
42, 43	P35, P34	O	FL tube anode output. (P35, P34).
44	G1	O	FL tube grid output. (1G).
45	P33	O	FL tube anode output. (P33).
46	VDD3	—	Microprocessor power supply. (µ-com 5V).
47-50	P32-P29	O	FL tube anode output. (P32-P29).
51	VP	—	Connected to minus power supply -VFL for FL.
52-71	P28-P9	O	FL tube anode output. (P28-P9).
72	VDD4	—	Microprocessor power supply. (µ-com 5V).
73-80	P8-P1	O	FL tube anode output. (P8-P1).
81	S48	—	NC.
82-84	PG1-PG3	—	
85, 86	P00, P01	—	
87	O-CE	O	Connected to TUNER PLL IC LC72131pin-③ CE.
88	O-TUON	O	TUNER power supply. ON/OFF output.
89	VSS2	—	GND.

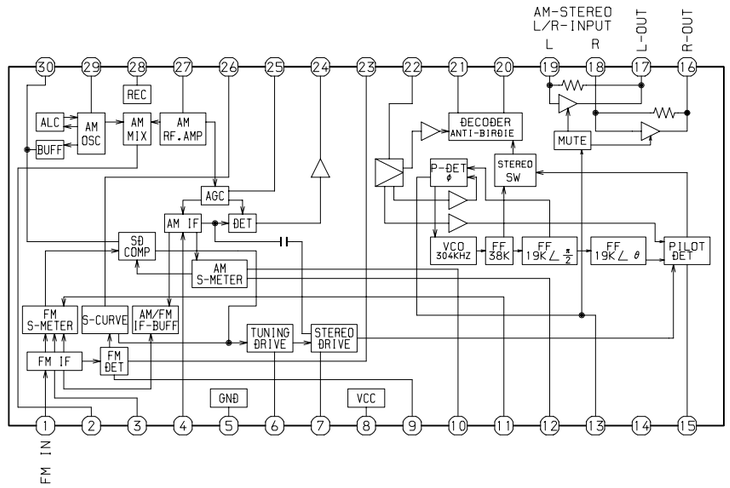
Pin No.	Pin Name	I/O	Description
90	VDD2	—	Microprocessor power supply. (µ-com 5V).
91, 92	P04, P05	—	NC.
93	O-MUTE	O	Main mute output.
94	P07	—	NC.
95-97	P10-12	—	
98	O-MASI	O	Serial data output to master microprocessor.
99	I-$\overline{\text{MASO}}$	I	Serial data input from master microprocessor.
100	I-MACLK	I	Transfer clock input from master microprocessor.

IC BLOCK DIAGRAM

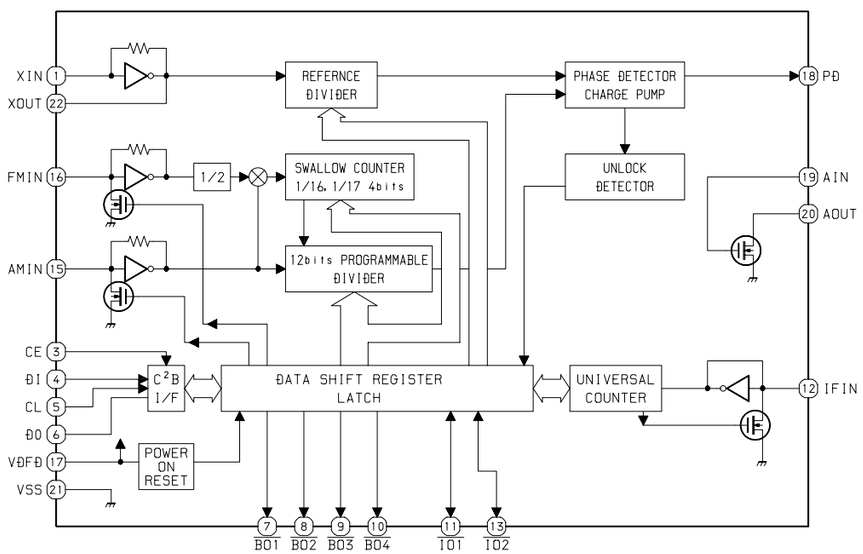
IC, BU1920FS



IC, LA1837

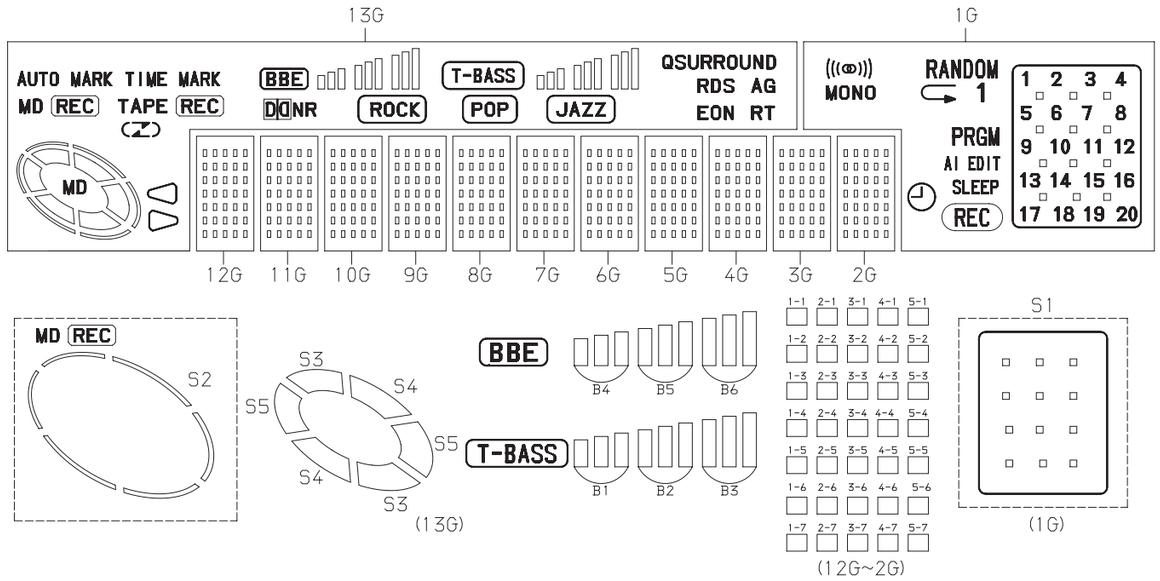


IC, LC72131



FL (13-ST-36GNAK) GRID ASSIGNMENT/ANODE CONNECTION

GRID ASSIGNMENT

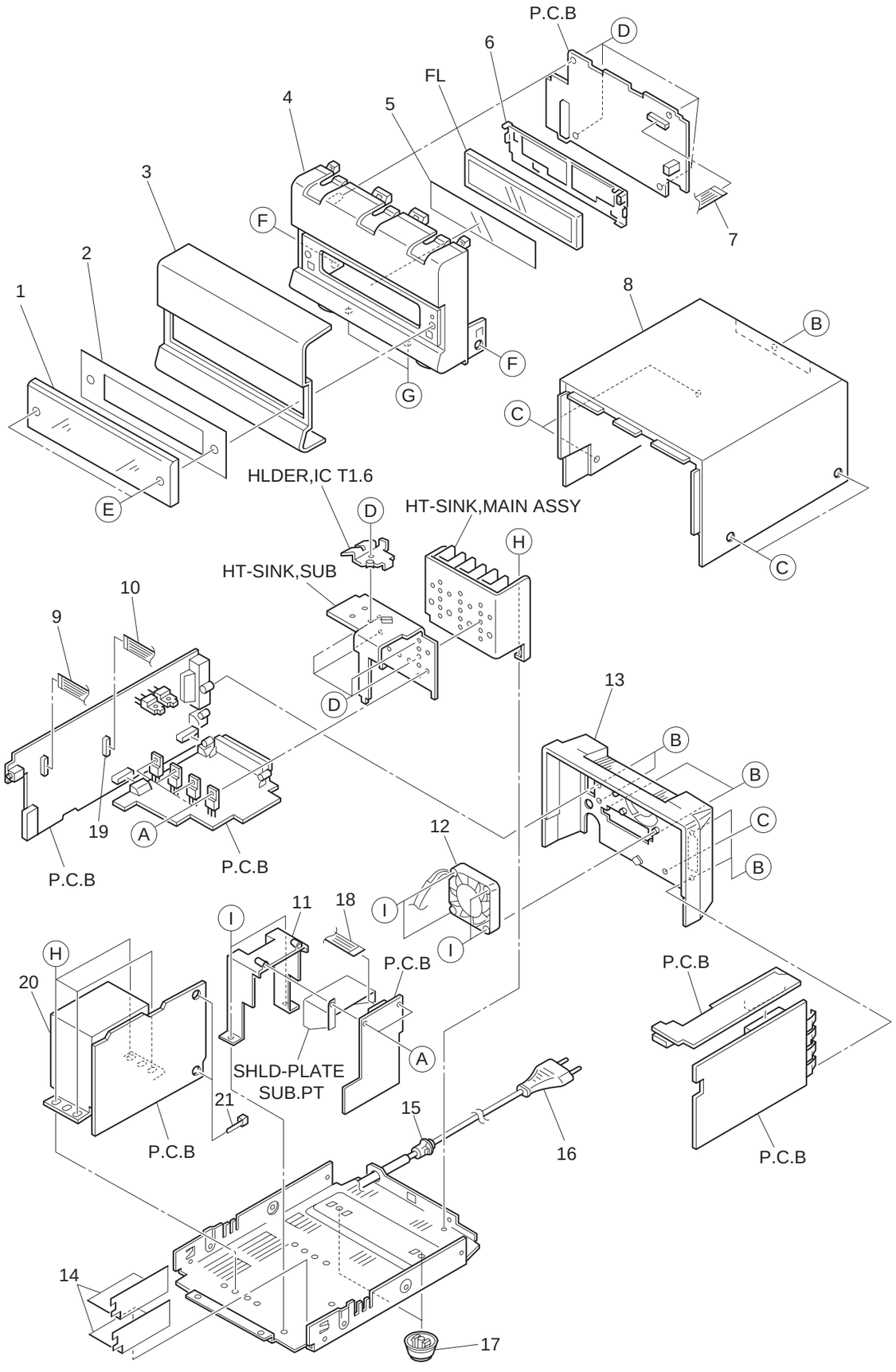


ANODE CONNECTION

	13G	12G~2G	1G
P1	JAZZ	1-1	1
P2	POP	2-1	↪
P3	ROCK	3-1	MONO
P4	DD NR	4-1	RANDOM
P5	RT	5-1	((∞))
P6	EON	1-2	PRGM
P7	AG	2-2	AI
P8	RDS	3-2	EDIT
P9	B1	4-2	SLEEP
P10	B2	5-2	🕘
P11	B3	1-3	REC
P12	T-BASS	2-3	(CALENDAR) 1
P13	B4	3-3	2
P14	B5	4-3	3
P15	B6	5-3	4
P16	BBE	1-4	5
P17	◁	2-4	6
P18	▷	3-4	7

	13G	12G~2G	1G
P19	☽	4-4	8
P20	☼	5-4	9
P21	☾	1-5	10
P22	TAPE REC	2-5	11
P23	S2	3-5	12
P24	S3	4-5	13
P25	S4	5-5	14
P26	S5	1-6	15
P27	MD	2-6	16
P28	TIME MARK	3-6	17
P29	AUTO MARK	4-6	18
P30	QSURROUND	5-6	19
P31	-	1-7	20
P32	-	2-7	S1
P33	-	3-7	-
P34	-	4-7	-
P35	-	5-7	-

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-CL1-056-010		WINDOW,DISP EX<200KS>
1	8Z-CL1-055-010		WINDOW,DISP EZ<201EZS>
2	8Z-CL1-031-010		PLATE,FL
3	8Z-CL1-041-010		PANEL,FR RX EZ<201EZS>
4	8Z-CL1-001-010		CABI,FR RX
5	8Z-CL1-030-010		PLATE,WINDOW RX
6	8Z-CL1-204-010		HLDR,FL
7	88-910-131-110		FF-CABLE,10P 1.25
8	8Z-CL1-003-010		CABI,TOP RX
9	8Z-CL1-655-010		F-CABLE,4P 2.5 100MM PWR
10	8Z-CL1-656-010		F-CABLE,7P 2.5 150MM PWR
11	8Z-CL1-203-010		HLDR,SUB PT
12	8Z-CL1-663-010		FAN,MF40D-12-200MM
13	8Z-CL1-052-010		PANEL,REAR RX E<201EZS>
13	8Z-CL1-042-010		PANEL,REAR RX K<200KS>
14	8Z-CL1-213-010		COVER, PWB AC
15	87-085-185-010		BUSHING, AC CORD (E)
⚠ 16	87-A80-092-010		AC CORD ASSY,E BLK SUN FAI<201EZS>
⚠ 16	87-A80-007-010		AC CORD ASSY,K BLK<200KS>
17	81-669-025-010		FOOT, H11
18	8Z-CL1-654-010		F-CABLE,2P 2.5 170MM SUBPT
19	87-A90-460-010		HLDR,WIRE 2.5-7P
⚠ 20	8Z-CL1-623-010		PT,E
A	87-067-579-010		BVT2+3-8 W/O SLOT
B	87-744-095-410		UT2+3-8 W/O SLOT CR2
C	87-B10-068-010		UTT2+3-6 W/O SLOT CR
D	87-067-703-010		TAPPING SCREW, BVT2+3-10
E	8Z-CL1-034-010		S-SCREW,ZCL1
F	87-591-094-010		QIT+3-6 GOLD
G	87-067-761-010		TAPPING SCREW, BVT2+3-10
H	87-067-585-010		TAPPING SCREW, BVTT+4-6
I	87-751-095-410		UT2+3-8

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

MODEL NO. FM-LMD200/LMD201

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-707-010		C-IC,CXA2523AR
	87-A20-708-010		C-IC,CXD2652AR
	87-A20-709-040		C-IC,BD7910FV
	87-ZG9-607-010		C-IC,CXP81952M-523R
	87-ZG9-606-040		C-IC,MN41V4400SJ-08
	87-A20-755-080		C-IC,AK93C45AF
	87-A20-710-040		C-IC,S-8110AMP
	87-A20-711-040		C-IC,BA5970FP
	87-A20-712-040		C-IC,BA6417F
	87-A21-110-040		C-IC,AK4519VF
	87-017-853-040		IC,NJM2100V
	87-A20-797-040		C-IC,NJU7221U30
	87-A20-798-040		C-IC,NJU7221U35
	87-A20-714-040		C-IC,NJM2370U33
	87-A20-446-010		C-IC,LA9241ML
	87-A20-459-010		C-IC,LC78622ED
	87-A20-445-010		IC,BA5936
	8Z-CL1-628-010		C-IC,LC866548-5M36
	87-A20-914-010		IC,SPS-442-1-F
	87-A20-870-010		IC,GP1F37R
	87-A21-175-040		C-IC,TC74VHC14FT
	87-A21-111-040		C-IC,M62495FP
	87-A21-022-040		C-IC,BA3880FS
	87-A21-103-040		C-IC,MM1454XFBE
	87-017-888-080		IC,NJM4558MD
TRANSISTOR			
	87-026-463-080		TR,2SA933S (0.3W)
	87-026-239-080		TR,DTC114TK (0.2W)
	89-113-184-080		TR,2SA1318T
	87-026-297-080		TR,DTA144TK
	87-A30-047-080		TR,CSD655E
	87-A30-075-080		C-TR,2SA1235F
	87-026-610-080		TR,KTC3198GR
	87-A30-083-080		TR,CSD1489B
	87-A30-071-080		C-TR,RT1N 144C
	87-A30-087-080		C-FET,2SK2158
	89-327-143-080		TR,2SC2714 (0.1W)
	87-A30-074-080		C-TR,RT1P 141C
	89-213-702-010		TR,2SB1370 (1.8W)
	87-A30-152-080		TR,2SC5395F
	87-026-423-080		C-TR RN2305
	89-115-884-080		CHIP -TRANSISTER 2SA1588Y
	89-341-164-080		CHIP-TRANSISTOR,2SC4116 Y
	87-026-412-080		C-TR RN1305
DIODE			
	87-020-465-080		DIODE,1SS133 (110MA)
	87-A40-270-080		C-DIODE,MC2838
	87-A40-509-080		ZENER,MTZJ6.8C
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-269-080		C-DIODE,MC2836
	87-A40-299-080		ZENER,DZ5.1M
	87-017-083-080		ZENER,HZS4C2
	87-A40-292-080		ZENER,DZ2.7L
	87-001-731-080		ZENER,HZS6C2L
	87-001-166-080		DIODE,1SS301
	87-A40-412-040		C-DIODE,SB05-05CP
CD C.B			
C1	87-010-496-040		CAP,E 3.3-50 GAS
C2	87-010-197-080		CAP, CHIP 0.01 DM
C3	87-010-264-040		CAP,E 100-10
C4	87-A10-189-040		CAP,E 220-10
C5	87-010-197-080		CAP, CHIP 0.01 DM
C6	87-010-553-040		CAP,E 47-16 GAS
C7	87-012-349-080		C-CAP,S 1000P-50 CH
C8	87-010-198-080		CAP, CHIP 0.022
C9	87-010-264-040		CAP,E 100-10
C10	87-010-264-040		CAP,E 100-10
C12	87-010-494-040		CAP,E 1-50 GAS
C13	87-010-193-080		CHIP CAPACITOR,0.033
C14	87-010-560-040		CAP,E 10-50 GAS
C16	87-010-491-040		CAP,E 0.22-50 GAS
C17	87-012-349-080		C-CAP,S 1000P-50 CH
C18	87-010-213-080		C-CAP,S 0.015-50 B
C20	87-010-193-080		CHIP CAPACITOR,0.033
C22	87-010-184-080		CHIP CAPACITOR 3300P(K)
C23	87-010-992-080		C-CAP,S 0.047-25 B
C25	87-012-349-080		C-CAP,S 1000P-50 CH
C27	87-010-176-080		C-CAP,S 680P-50 SL
C29	87-010-186-080		CAP,CHIP 4700P
C30	87-012-156-080		C-CAP,S 220P-50 CH
C31	87-010-493-040		CAP,E 0.47-50 GAS
C32	87-010-553-040		CAP,E 47-16 GAS
C33	87-010-494-040		CAP,E 1-50 GAS
C34	87-010-184-080		CHIP CAPACITOR 3300P(K)
C35	87-010-197-080		CAP, CHIP 0.01 DM
C36	87-010-553-040		CAP,E 47-16 GAS
C37	87-010-404-040		CAP,E 4.7-50
C38	87-010-196-080		CHIP CAPACITOR,0.1-25
C40	87-010-145-080		C-CAP,S 1P-50 CH
C42	87-010-315-080		C-CAP,S 27P-50 CH
C45	87-010-196-080		CHIP CAPACITOR,0.1-25
C46	87-010-196-080		CHIP CAPACITOR,0.1-25
C47	87-010-196-080		CHIP CAPACITOR,0.1-25
C48	87-010-315-080		C-CAP,S 27P-50 CH
C50	87-012-140-080		CAP 470P
C51	87-012-156-080		C-CAP,S 220P-50 CH
C52	87-012-140-080		CAP 470P
C55	87-010-264-040		CAP,E 100-10
C57	87-010-316-080		C-CAP,S 33P-50 CH
C58	87-010-316-080		C-CAP,S 33P-50 CH
C59	87-010-264-040		CAP,E 100-10
C60	87-010-196-080		CHIP CAPACITOR,0.1-25
C61	87-010-196-080		CHIP CAPACITOR,0.1-25
C62	87-010-370-040		CAP,E 330-6.3 SME
C65	87-010-497-040		CAP,E 4.7-35 GAS
C66	87-010-196-080		CHIP CAPACITOR,0.1-25
C67	87-010-264-040		CAP,E 100-10
C68	87-010-322-080		C-CAP,S 100P-50 CH
C75	87-010-197-080		CAP, CHIP 0.01 DM
C76	87-A10-102-080		CAP,E 1000-10 REA
C79	87-010-264-040		CAP,E 100-10
C80	87-010-197-080		CAP, CHIP 0.01 DM
C81	87-010-560-040		CAP,E 10-50 GAS
C82	87-010-560-040		CAP,E 10-50 GAS
C83	87-012-157-080		C-CAP,S 330P-50 CH
C84	87-012-157-080		C-CAP,S 330P-50 CH
C93	87-010-197-080		CAP, CHIP 0.01 DM
C94	87-010-197-080		CAP, CHIP 0.01 DM
C98	87-012-154-080		C-CAP,S 150P-50 CH
C102	87-010-322-080		C-CAP,S 100P-50 CH
C104	87-010-322-080		C-CAP,S 100P-50 CH
C105	87-010-322-080		C-CAP,S 100P-50 CH
C110	87-010-196-080		CHIP CAPACITOR,0.1-25
C141	87-010-992-080		C-CAP,S 0.047-25
C146	87-010-498-040		CAP,E 10-16 M 5L
C201	87-012-145-080		CAP, CHIP S 270P CH
C203	87-010-312-080		C-CAP,S 15P-50 CH
C204	87-015-785-080		CHIP CAPACITOR, 0.1FZ-25Z
C205	87-010-196-080		CHIP CAPACITOR,0.1-25
C210	87-012-349-080		C-CAP,S 1000P-50 CH
C217	87-010-498-040		CAP,E 10-16 GAS
C220	87-010-197-080		CAP, CHIP 0.01 DM

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C221	87-010-235-080		CAP,E 470-16 SME
C222	87-010-101-080		CAP, ELECT 220-16
C223	87-010-381-080		CAP, ELECT 330-16V
C241	87-010-493-040		CAP,E 0.47-50 GAS
C242	87-A10-759-040		CAP,E 330-6.3 SRM
C243	87-010-196-080		CHIP CAPACITOR,0.1-25
C246	87-010-197-080		CAP, CHIP 0.01 DM
C251	87-010-194-080		CAP, CHIP 0.047
C252	87-010-194-080		CAP, CHIP 0.047
C254	87-010-264-040		CAP,E 100-10
C271	87-010-196-080		CHIP CAPACITOR,0.1-25
C354	87-010-495-040		CAP,E 2.2-50 GAS
C401	87-010-178-080		CHIP CAP 1000P
C402	87-010-178-080		CHIP CAP 1000P
C403	87-010-196-080		CHIP CAPACITOR,0.1-25
C404	87-010-196-080		CHIP CAPACITOR,0.1-25
C411	87-012-140-080		CAP 470P
C413	87-010-982-040		CAP,E 33-25 GAS
C414	87-010-982-040		CAP,E 33-25 GAS
C431	87-010-497-040		CAP,E 4.7-35 GAS
C432	87-010-497-040		CAP,E 4.7-35 GAS
C473	87-010-221-080		CAP,E 470-10 SME
C474	87-010-197-080		CAP, CHIP 0.01 DM
CN1	87-A60-429-010		CONN,16P H TOC-A
CN2	87-009-411-010		CONN,6P ZH V
CN3	87-A60-111-010		CONN,5P V S2M 5W
CN202	87-A60-826-010		CONN,6P B TMC-D(X)
CN203	87-099-558-010		CONN,12P TUC-P12X-B1
CN204	87-099-670-010		CONN,9P TUC-P9X-B1
CN205	87-099-554-010		CONN,6P TUC-P6X-B1
CN401	87-A60-423-010		CONN,14P V TOC-B
CN402	87-A60-476-010		CONN,8P H 6232 RADIP
L1	87-003-102-080		COIL, 10UH
L4	87-003-152-080		COIL, 100UH
L5	87-003-152-080		COIL, 100UH
L201	87-A50-052-010		COIL,CLOCK 5.76MHZ T1
SFR130	87-A90-787-080		SFR,100K H HOKU
W201	8Z-CL1-653-010		F-CABLE,19P 1.5 FG
WH201	87-A90-878-010		HLDR,WIRE 19P 1.5 51016
X1	87-A70-046-010		VIB,XTAL 16.934MHZ

FUNC C.B

C351	87-012-142-080		CAP, S 0.33-16
C352	87-010-384-080		CAP, ELECT 100-25V
C353	87-010-400-080		CAP, ELECT 0.47-50V
C501	87-010-197-080		CAP, CHIP 0.01 DM
C531	87-010-374-080		CAP, ELECT 47-10V
C532	87-010-374-080		CAP, ELECT 47-10V
C535	87-010-213-080		C-CAP,S 0.015-50 B
C536	87-010-213-080		C-CAP,S 0.015-50 B
C537	87-010-400-080		CAP, ELECT 0.47-50V
C538	87-010-400-080		CAP, ELECT 0.47-50V
C539	87-010-400-080		CAP, ELECT 0.47-50V
C540	87-010-400-080		CAP, ELECT 0.47-50V
C541	87-010-401-080		CAP, ELECT 1-50V
C542	87-010-401-080		CAP, ELECT 1-50V
C543	87-010-154-080		CAP CHIP 10P
C583	87-012-283-080		CAP,CHIP 5600P
C584	87-012-283-080		CAP,CHIP 5600P
C591	87-010-180-080		C-CER 1500P
C592	87-010-180-080		C-CER 1500P
C603	87-010-402-080		CAP, ELECT 2.2-50V
C604	87-010-402-080		CAP, ELECT 2.2-50V
C605	87-010-408-080		CAP, ELECT 47-50V
C607	87-010-405-080		CAP, ELECT 10-50V
C608	87-010-405-080		CAP, ELECT 10-50V
C609	87-010-196-080		CHIP CAPACITOR,0.1-25
C610	87-010-384-080		CAP, ELECT 100-25V
C611	87-010-197-080		CAP, CHIP 0.01 DM
C612	87-010-197-080		CAP, CHIP 0.01 DM
C621	87-010-401-080		CAP, ELECT 1-50V
C622	87-010-401-080		CAP, ELECT 1-50V
C653	87-010-404-040		CAP,E 4.7-50
C654	87-010-404-040		CAP,E 4.7-50
C655	87-010-404-040		CAP,E 4.7-50
C656	87-010-404-040		CAP,E 4.7-50
C657	87-010-188-080		CAP,CHIP 6800P
C658	87-010-188-080		CAP,CHIP 6800P
C659	87-012-140-080		CAP 470P
C660	87-012-140-080		CAP 470P
C662	87-010-260-080		CAP, ELECT 47-25V
C665	87-010-197-080		CAP, CHIP 0.01 DM
C666	87-010-197-080		CAP, CHIP 0.01 DM
C667	87-010-598-080		C-CAP,S 0.068-16VRK
C668	87-010-598-080		C-CAP,S 0.068-16VRK
C669	87-010-260-080		CAP, ELECT 47-25V
C670	87-010-196-080		CHIP CAPACITOR,0.1-25
C671	87-010-404-040		CAP,E 4.7-50
C672	87-010-404-040		CAP,E 4.7-50
C677	87-010-404-040		CAP,E 4.7-50
C678	87-010-404-040		CAP,E 4.7-50
C721	87-010-401-080		CAP, ELECT 1-50V
C722	87-010-401-080		CAP, ELECT 1-50V
C723	87-012-154-080		C-CAP,S 150P-50 CH
C724	87-012-154-080		C-CAP,S 150P-50 CH
C725	87-012-154-080		C-CAP,S 150P-50 CH
C726	87-012-154-080		C-CAP,S 150P-50 CH
C727	87-010-404-080		CAP, ELECT 4.7-50V
C728	87-010-404-080		CAP, ELECT 4.7-50V
C733	87-010-197-080		CAP, CHIP 0.01 DM
C734	87-010-381-080		CAP, ELECT 330-16V
C735	87-010-197-080		CAP, CHIP 0.01 DM
CN503	87-099-569-010		CONN,12P TUC-P12P-B1
CN504	87-099-668-010		CONN,9P TUC-P 9P-B1
J501	82-MA2-631-010		JACK PIN 4P RVS
J701	87-A60-354-010		JACK,PIN 2P MSP -242V-05

POWER C.B

C90	87-018-211-080		CAP, CER 0.01-50
C91	87-010-408-080		CAP, ELECT 47-50V
C92	87-010-382-080		CAP, ELECT 22-25V
C453	87-018-209-080		CAP, CER 0.1-50V
C454	87-010-252-080		CAP, ELECT 1000-6.3V
C455	87-010-235-080		CAP,E 470-16 SME
CN402	87-099-565-010		CONN,6P TUC-P4P-B1

KEY C.B

S301	87-A91-024-080		SW,TACT KSH0611BT
S302	87-A91-024-080		SW,TACT KSH0611BT
S303	87-A91-024-080		SW,TACT KSH0611BT
S304	87-A91-024-080		SW,TACT KSH0611BT
S305	87-A91-024-080		SW,TACT KSH0611BT
S306	87-A91-024-080		SW,TACT KSH0611BT
S307	87-A91-024-080		SW,TACT KSH0611BT
S308	87-A91-024-080		SW,TACT KSH0611BT
S309	87-A91-024-080		SW,TACT KSH0611BT
S310	87-A91-024-080		SW,TACT KSH0611BT
S311	87-A91-024-080		SW,TACT KSH0611BT

REMO C.B

C341	87-010-405-080		CAP, ELECT 10-50V
CN302	87-A60-827-010		CONN,6P B TMC-D(P)
S321	87-A91-024-080		SW,TACT KSH0611BT

MOTOR C.B

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
CNA101	88-802-051-290		CONN ASSY,5P
M101	87-A91-069-010		MOT,RF-370CA15370
CD DOOR C.B			
S101	87-036-109-010		PUSH SWITCH
S102	87-036-109-010		PUSH SWITCH
MD C.B			
C100	87-016-296-080		C-CAP,TN 22-4SV(A)
C101	87-016-296-080		C-CAP,TN 22-4SV(A)
C102	87-012-286-080		CAP, U 0.01-25
C103	87-010-787-080		CAP, U 0.022-25
C104	87-010-662-080		C-CAP,E 22-6.3
C105	87-010-831-080		C-CAP,U,0.1-16F
C106	87-016-462-080		C-CAP,S 1-16 F
C107	87-012-195-080		C-CAP,U 100P-50CH
C108	87-012-274-080		CHIP CAP,U 1000P-50B
C109	87-016-436-080		C-CAP,TN 47-4(B2)
C111	87-016-296-080		C-CAP,TN 22-4SV(A)
C112	87-012-286-080		CAP, U 0.01-25
C113	87-012-284-080		CAP, U 6800P-50
C114	87-010-828-080		CHIP CAPACITOR,U 0.033-25F
C115	87-A10-369-080		C-CAP,S 0.47-16 K B
C116	87-012-282-080		CAP, U 4700P-50
C117	87-016-462-080		C-CAP,S 1-16 F
C118	87-012-282-080		CAP, U 4700P-50
C119	87-016-491-080		C-CAP,S 0.22-16 FZ
C120	87-010-787-080		CAP, U 0.022-25
C121	87-012-286-080		CAP, U 0.01-25
C122	87-010-829-080		CAP, U 0.047-16
C123	87-012-286-080		CAP, U 0.01-25
C124	87-010-662-080		C-CAP,E 22-6.3
C125	87-010-662-080		C-CAP,E 22-6.3
C126	87-010-831-080		C-CAP,U,0.1-16F
C201	87-010-831-080		C-CAP,U,0.1-16F
C202	87-010-831-080		C-CAP,U,0.1-16F
C203	87-010-785-080		C-CAP,U0.015-25BK
C204	87-016-461-080		C-CAP,S 0.47-16F
C205	87-010-831-080		C-CAP,U,0.1-16F
C206	87-012-270-080		CAP, U 470P-50
C207	87-016-461-080		C-CAP,S 0.47-16F
C208	87-012-286-080		CAP, U 0.01-25
C209	87-010-831-080		C-CAP,U,0.1-16F
C210	87-012-172-080		CAPACITOR CHIP U 10P CH
C211	87-012-172-080		CAPACITOR CHIP U 10P CH
C212	87-012-195-080		C-CAP,U 100P-50CH
C213	87-010-662-080		C-CAP,E 22-6.3
C214	87-012-274-080		CHIP CAP,U 1000P-50B
C217	87-012-188-080		C-CAP,U 47P-50 CH
C218	87-012-172-080		CAPACITOR CHIP U 10P CH
C219	87-016-296-080		C-CAP,TN 22-4SV(A)
C220	87-010-662-080		C-CAP,E 22-6.3
C221	87-010-831-080		C-CAP,U,0.1-16F
C222	87-016-444-080		C-CAP,TN 47-10 F95E
C223	87-010-831-080		C-CAP,U,0.1-16F
C224	87-A10-685-080		C-CAP,S 470P-100 J CH
C225	87-010-831-080		C-CAP,U,0.1-16F
C226	87-010-831-080		C-CAP,U,0.1-16F
C227	87-012-274-080		CHIP CAP,U 1000P-50B
C228	87-012-274-080		CHIP CAP,U 1000P-50B
C229	87-012-274-080		CHIP CAP,U 1000P-50B
C232	87-012-274-080		CHIP CAP,U 1000P-50B
C233	87-012-274-080		CHIP CAP,U 1000P-50B
C236	87-010-831-080		C-CAP,U,0.1-16F
C300	87-010-831-080		C-CAP,U,0.1-16F
C301	87-010-831-080		C-CAP,U,0.1-16F
C302	87-010-831-080		C-CAP,U,0.1-16F
C305	87-016-462-080		C-CAP,S 1-16 F

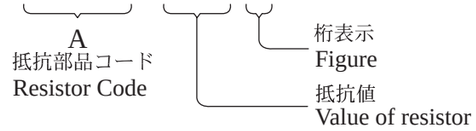
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C307	87-010-831-080		C-CAP,U,0.1-16F
C308	87-010-831-080		C-CAP,U,0.1-16F
C311	87-010-662-080		C-CAP,E 22-6.3
C312	87-012-195-080		C-CAP,U 100P-50CH
C321	87-012-274-080		CHIP CAP,U 1000P-50B
C322	87-012-274-080		CHIP CAP,U 1000P-50B
C323	87-012-274-080		CHIP CAP,U 1000P-50B
C324	87-012-274-080		CHIP CAP,U 1000P-50B
C325	87-012-274-080		CHIP CAP,U 1000P-50B
C400	87-010-831-080		C-CAP,U,0.1-16F
C401	87-010-831-080		C-CAP,U,0.1-16F
C402	87-010-831-080		C-CAP,U,0.1-16F
C403	87-010-831-080		C-CAP,U,0.1-16F
C404	87-010-831-080		C-CAP,U,0.1-16F
C405	87-010-661-080		C-CAP,E 10-16
C406	87-010-779-080		C-CAP,E 100-6.3
C407	87-012-197-080		C-CAP,U 150P-50 CH
C408	87-012-197-080		C-CAP,U 150P-50 CH
C411	87-012-271-080		CAP, U 560P-50
C412	87-012-271-080		CAP, U 560P-50
C413	87-012-197-080		C-CAP,U 150P-50 CH
C414	87-012-197-080		C-CAP,U 150P-50 CH
C417	87-012-268-080		C-CAP,U 330P-50 B
C418	87-012-268-080		C-CAP,U 330P-50 B
C423	87-012-286-080		CAP, U 0.01-25
C424	87-012-286-080		CAP, U 0.01-25
C429	87-012-286-080		CAP, U 0.01-25
C430	87-012-286-080		CAP, U 0.01-25
C431	87-010-779-080		C-CAP,E 100-6.3
C434	87-010-831-080		C-CAP,U,0.1-16F
C501	87-010-831-080		C-CAP,U,0.1-16F
C502	87-010-831-080		C-CAP,U,0.1-16F
C503	87-010-662-080		C-CAP,E 22-6.3
C504	87-010-831-080		C-CAP,U,0.1-16F
C505	87-010-662-080		C-CAP,E 22-6.3
C506	87-010-831-080		C-CAP,U,0.1-16F
C507	87-010-661-080		C-CAP,E 10-16
C508	87-010-831-080		C-CAP,U,0.1-16F
C509	87-010-662-080		C-CAP,E 22-6.3
C510	87-010-831-080		C-CAP,U,0.1-16F
C511	87-010-661-080		C-CAP,E 10-16
C513	87-010-661-080		C-CAP,E 10-16
C514	87-010-661-080		C-CAP,E 10-16
C515	87-012-337-080		C-CAP,U 56P-50 CH
C516	87-012-337-080		C-CAP,U 56P-50 CH
C517	87-012-278-080		C-CAP,U 2200P-50 B
C518	87-012-278-080		C-CAP,U 2200P-50 B
C519	87-010-831-080		C-CAP,U,0.1-16F
C520	87-010-661-080		C-CAP,E 10-16
C521	87-010-831-080		C-CAP,U,0.1-16F
C522	87-010-661-080		C-CAP,E 10-16
C523	87-010-662-080		C-CAP,E 22-6.3
C524	87-010-662-080		C-CAP,E 22-6.3
C525	87-012-274-080		CHIP CAP,U 1000P-50B
C526	87-012-274-080		CHIP CAP,U 1000P-50B
C527	87-010-661-080		C-CAP,E 10-16
C528	87-010-661-080		C-CAP,E 10-16
C530	87-010-831-080		C-CAP,U,0.1-16F
C531	87-010-831-080		C-CAP,U,0.1-16F
C600	87-010-662-080		C-CAP,E 22-6.3
C601	87-010-779-080		C-CAP,E 100-6.3
C602	87-010-779-080		C-CAP,E 100-6.3
C603	87-010-662-080		C-CAP,E 22-6.3
C604	87-010-779-080		C-CAP,E 100-6.3
C605	87-012-286-080		CAP, U 0.01-25
C607	87-010-831-080		C-CAP,U,0.1-16F
C608	87-010-831-080		C-CAP,U,0.1-16F
CN400	87-A60-027-080		C-CONN,8P H WHT
CN401	87-A60-062-010		CONN,05P V 9604S-05C
FB501	87-A90-828-080		C-F-BEAD, BK1608LM182

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
L100	87-A50-117-080		C-COIL,10UHLQH3C
L101	87-A50-012-080		C-COIL,100UH LQH3C
L102	87-A50-117-080		C-COIL,10UHLQH3C
L103	87-A50-117-080		C-COIL,10UHLQH3C
L201	87-A50-117-080		C-COIL,10UHLQH3C
L202	87-A50-117-080		C-COIL,10UHLQH3C
L203	87-A50-116-080		C-COIL,4.7UHLQH3C
L301	87-A50-117-080		C-COIL,10UHLQH3C
L501	87-A50-116-080		C-COIL,4.7UHLQH3C
L502	87-A50-116-080		C-COIL,4.7UHLQH3C
L503	87-A50-116-080		C-COIL,4.7UHLQH3C
L504	87-005-774-080		C-COIL,4BLH
L505	87-005-774-080		C-COIL,4BLH
L611	87-A50-163-080		C-COIL,ZBFS5101-PT
L612	87-005-512-080		C-COIL,BLM21A05
L613	87-005-512-080		C-COIL,BLM21A05
L614	87-A50-163-080		C-COIL,ZBFS5101-PT
L615	87-A90-034-080		C-FLTR,EMI BLM41P750
L616	87-A50-163-080		C-COIL,ZBFS5101-PT
R423	87-025-564-080		C-RES,U M/F 47K D
R424	87-025-564-080		C-RES,U M/F 47K D
R425	87-022-583-080		C-RES,U M/F 12K D
R426	87-022-583-080		C-RES,U M/F 12K D
X200	87-A70-105-080		C-VIB,XTAL 22.5792MHZ SMD-49
X301	87-A70-100-080		C-VIB,CER 12.0MHZ PBRC-BR-A
LOAD C.B			
M450	87-A90-672-010		MOT,M25E-4
SW451	87-A90-673-010		SW,MICRO ESE11SH1C
SW452	87-A90-117-010		SW,PUSH 1-1-1 MPU103
MECHA C.B			
SW400	87-A90-611-010		SW,PUSH 3-2-2 MPU20300MLB0
SW401	87-A90-612-010		SW,PUSH 2-1-1 MPU10371MLB1

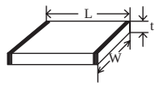
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



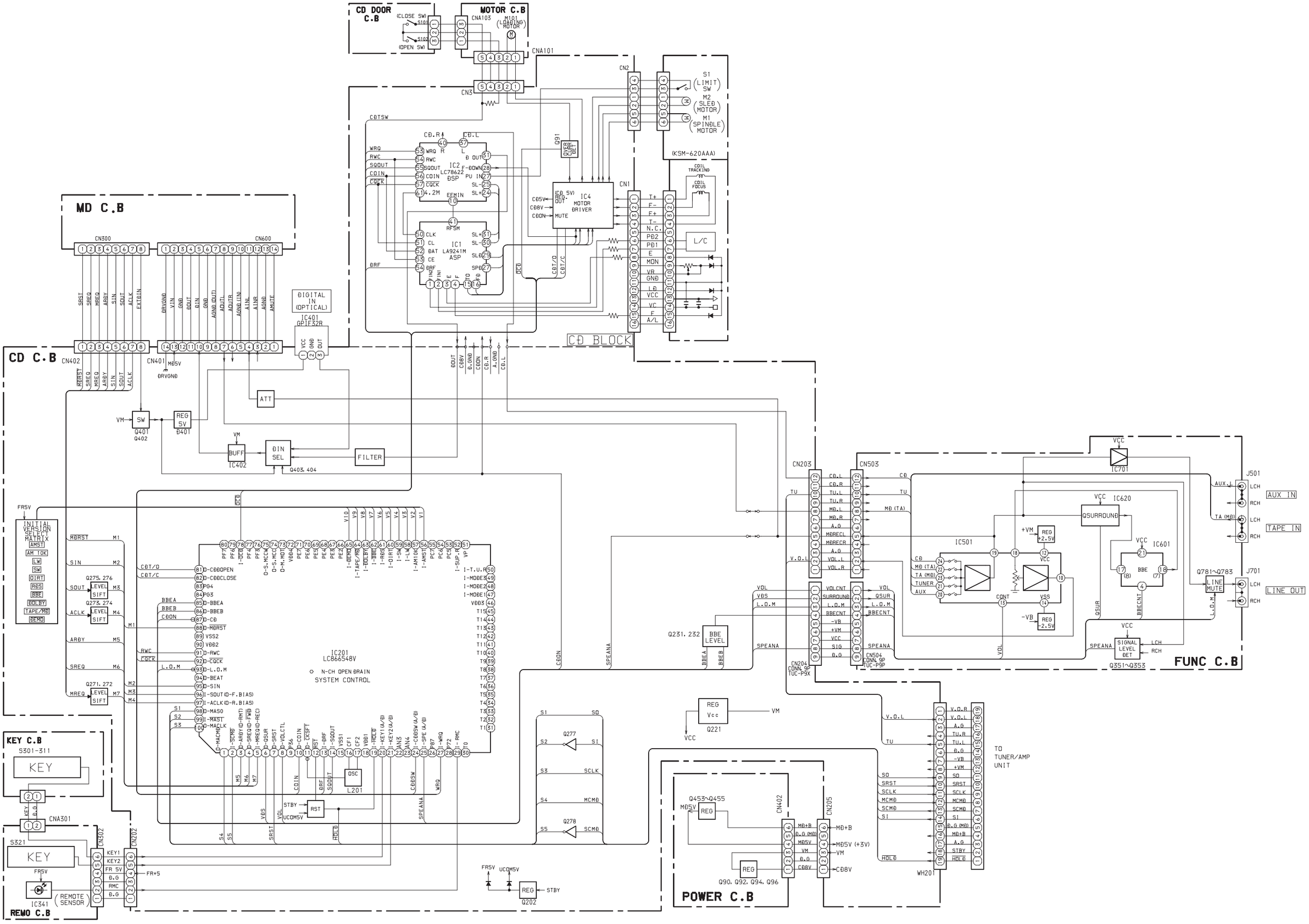
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

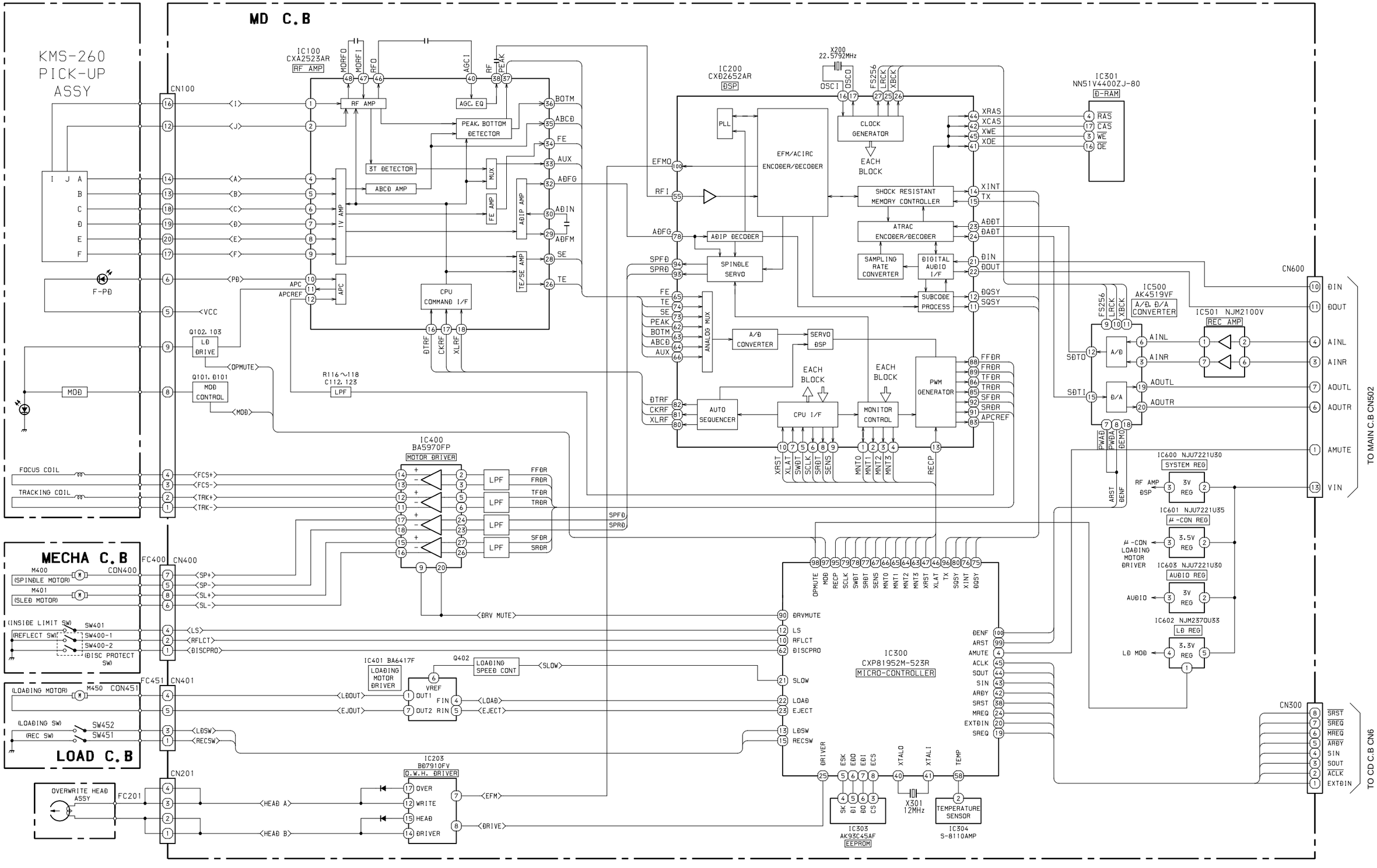
TRANSISTOR ILLUSTRATION

ECB	ECB	BCE			
2SA933S	2SA1318	2SB1370	2SA1235	DTC114TK	2SK2158
2SC5395	CSD655		2SA1588	RN1305	
	CSD1489		2SC2714	RN2305	
	KTC3198		2SC4116	RT1N144C	
			DTA144TK	RT1P141C	

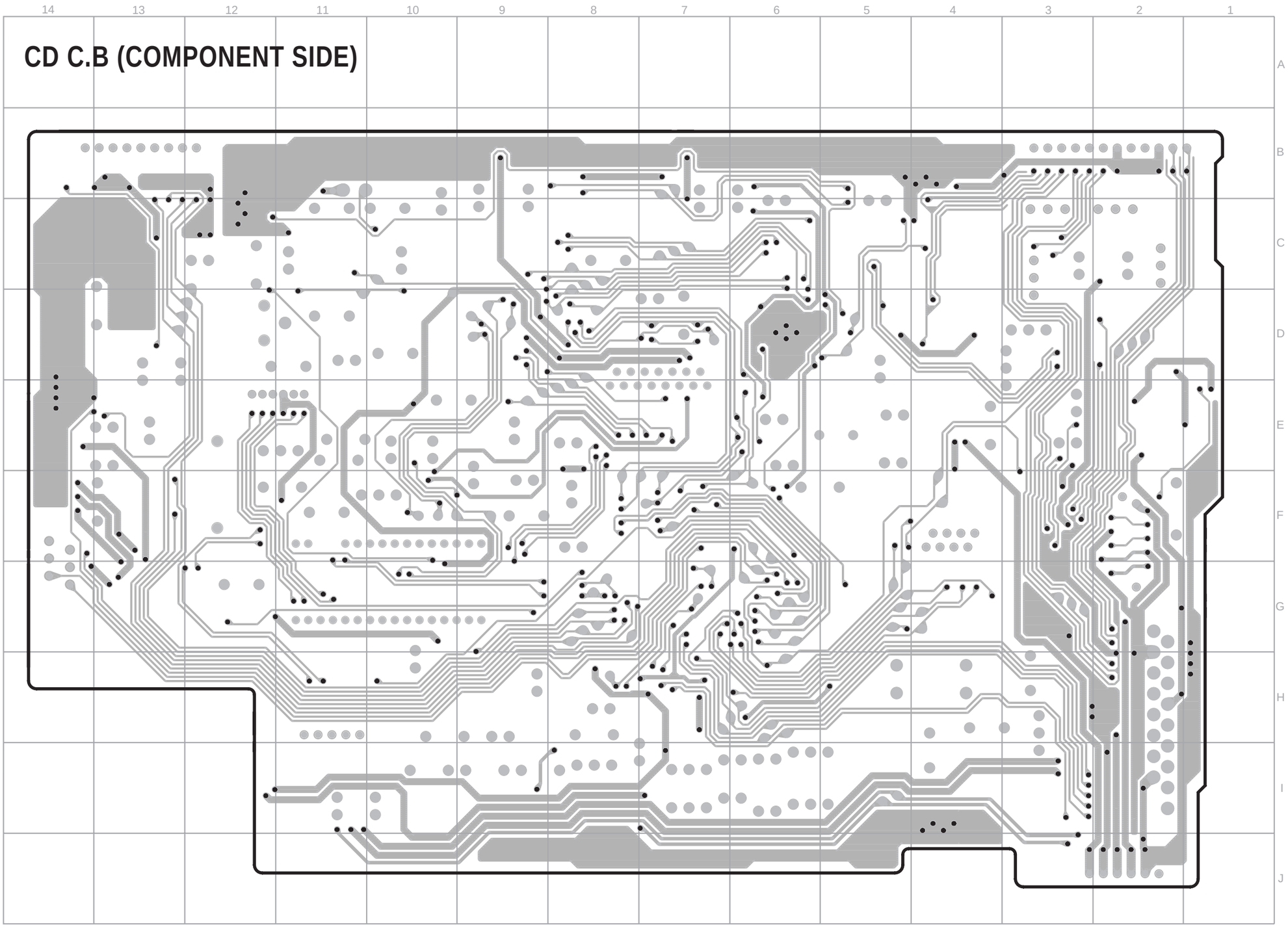
BLOCK DIAGRAM-1 (CD)



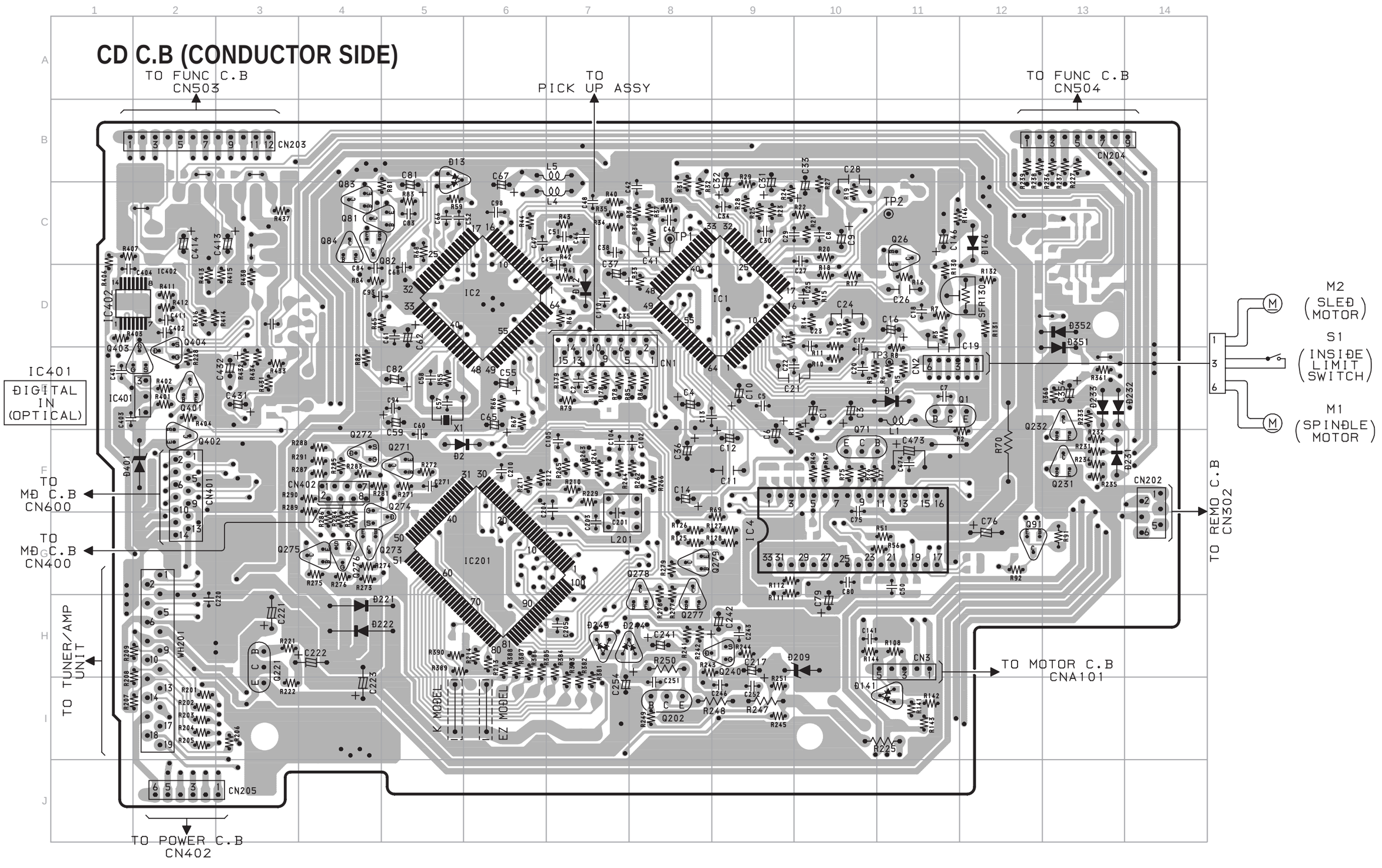
BLOCK DIAGRAM-2 (MD)



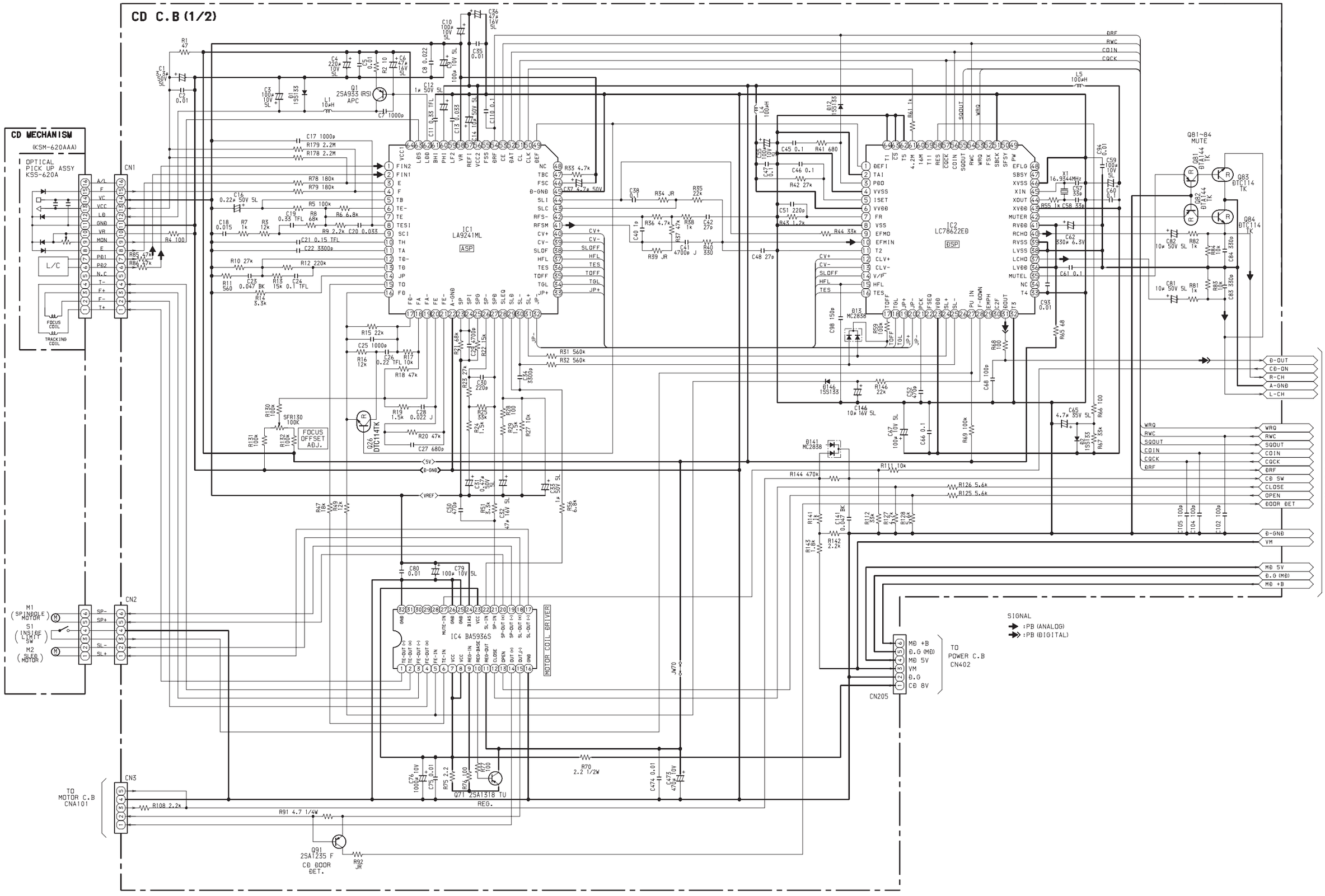
CD C.B (COMPONENT SIDE)



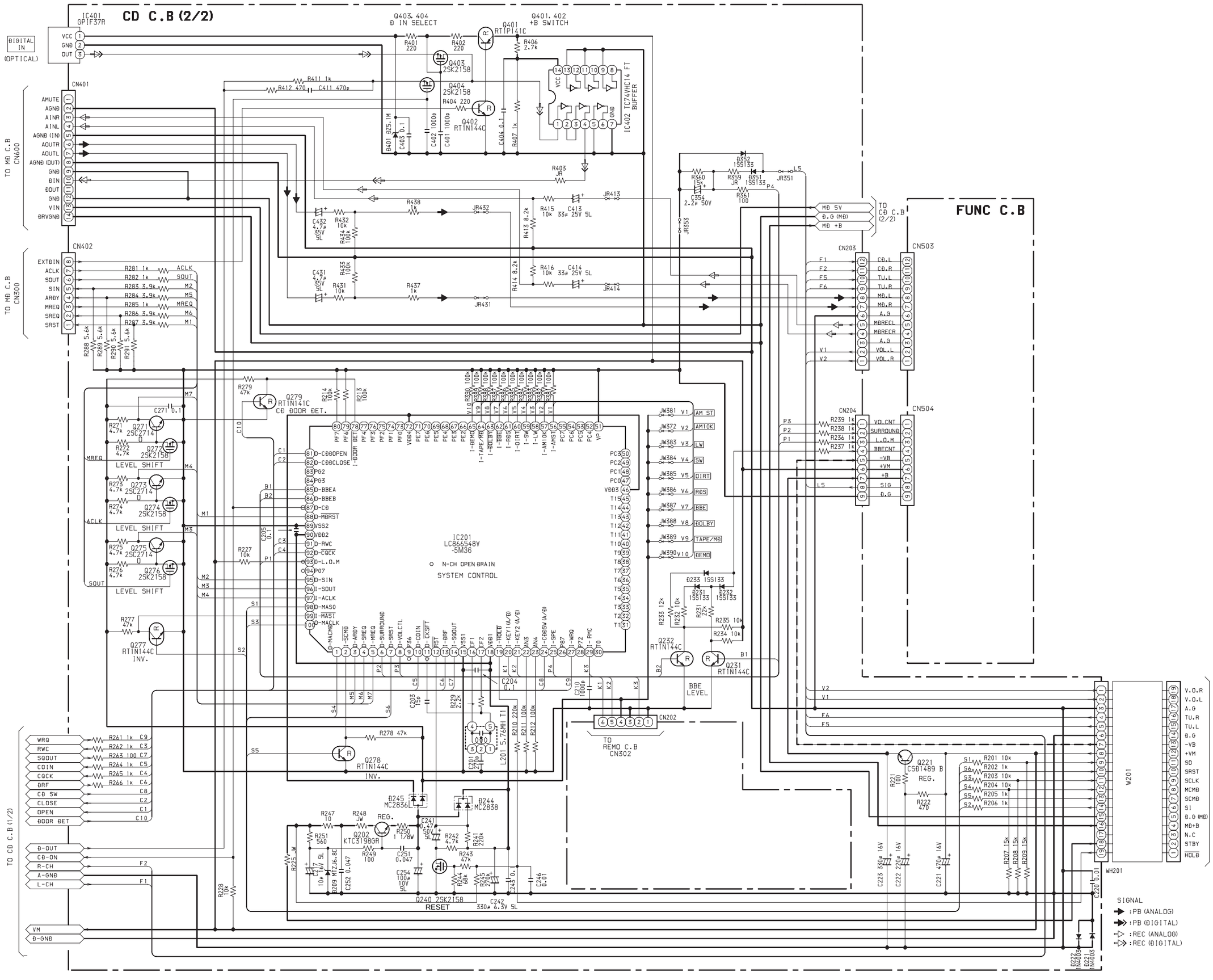
CD C.B (CONDUCTOR SIDE)



SCHEMATIC DIAGRAM-1 (CD 1/2)



SCHEMATIC DIAGRAM-2 (CD 2/2)



KEY C.B

POWER C.B

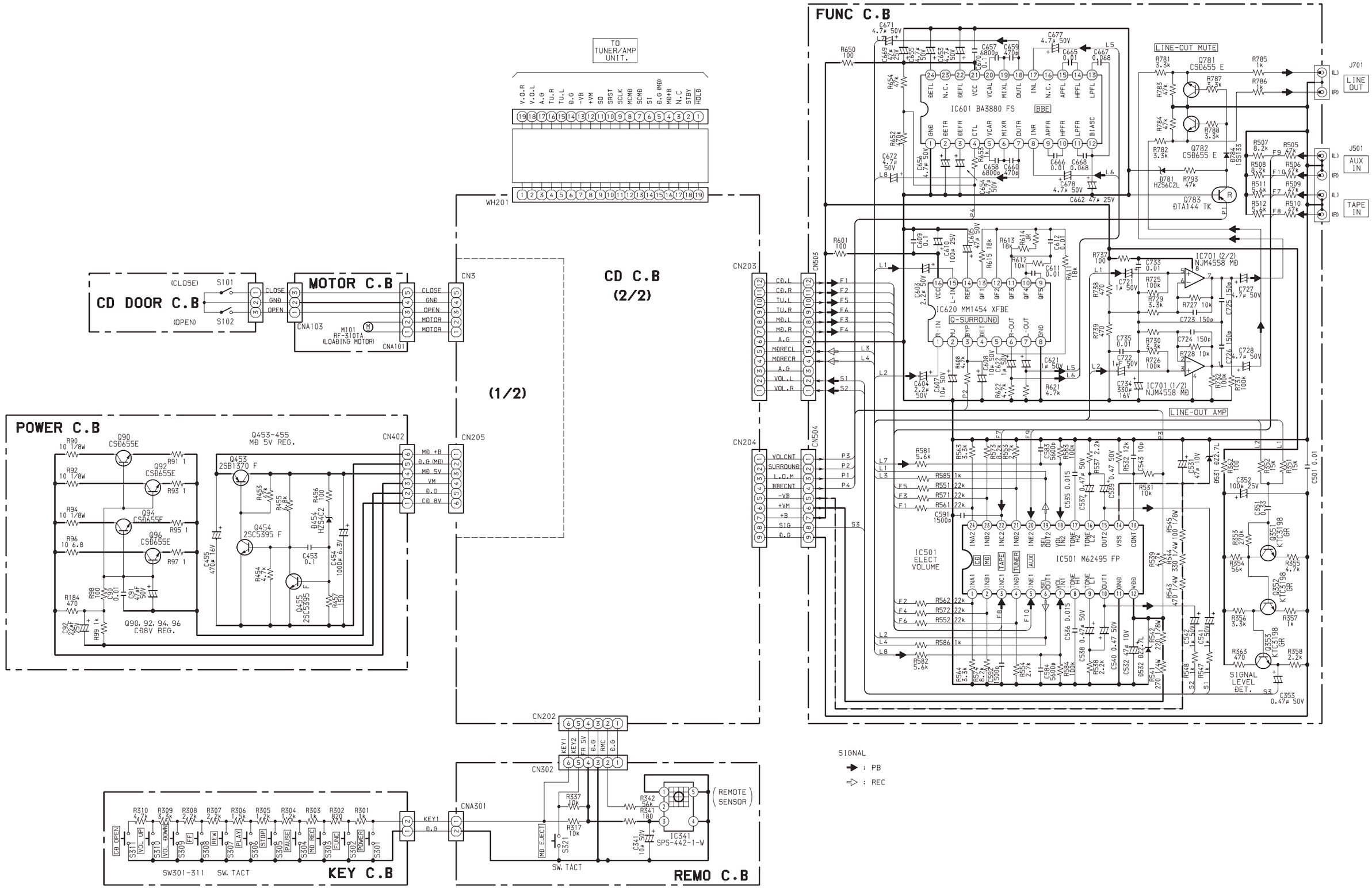
CD DOOR C.B

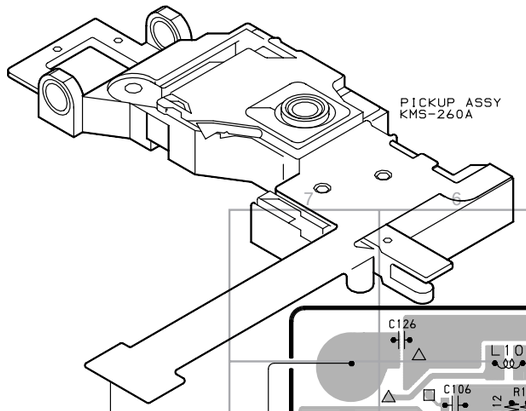
REMO C.B

MOTOR C.B

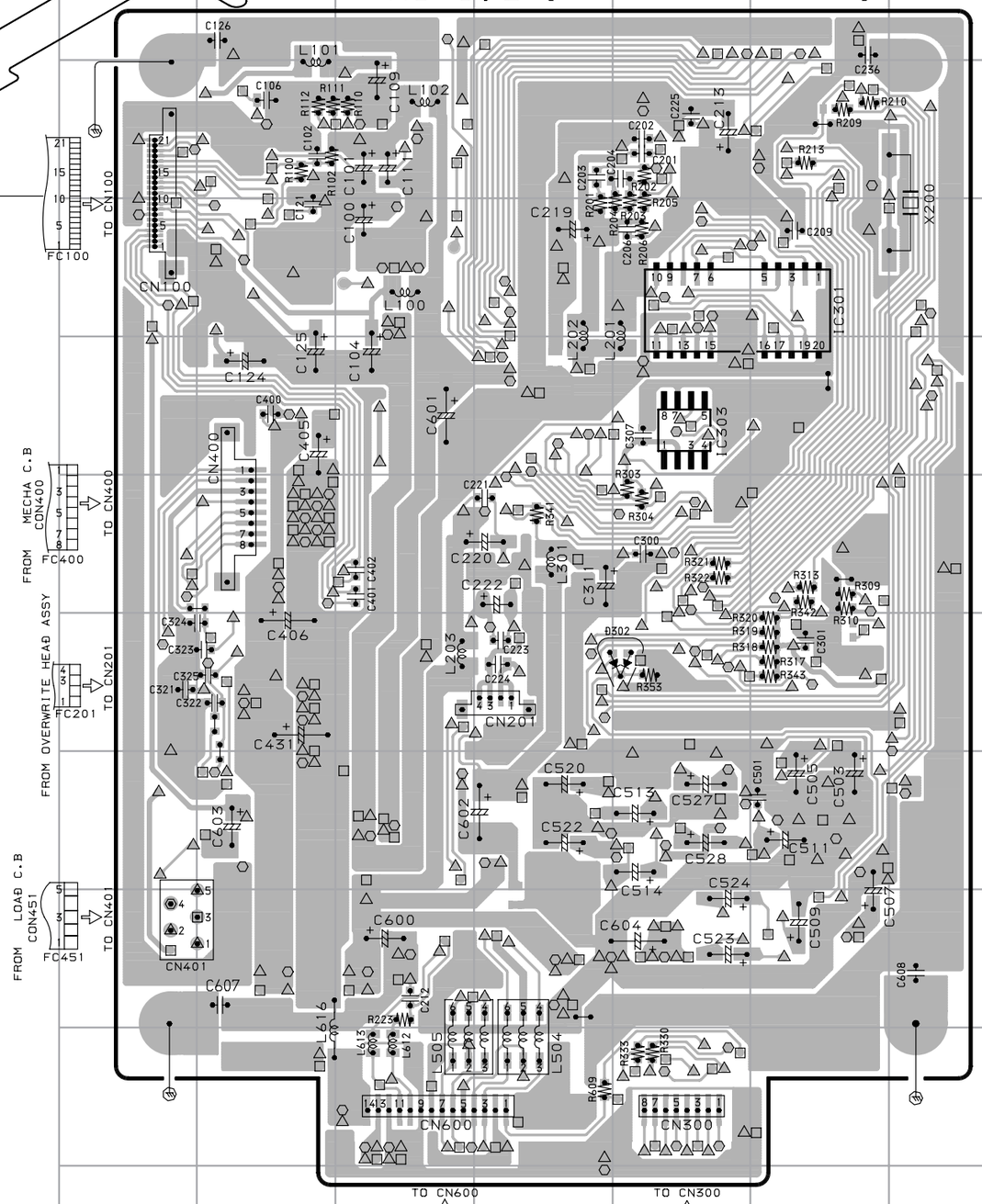
FUNC C.B

SCHEMATIC DIAGRAM-3 (FUNCTION)

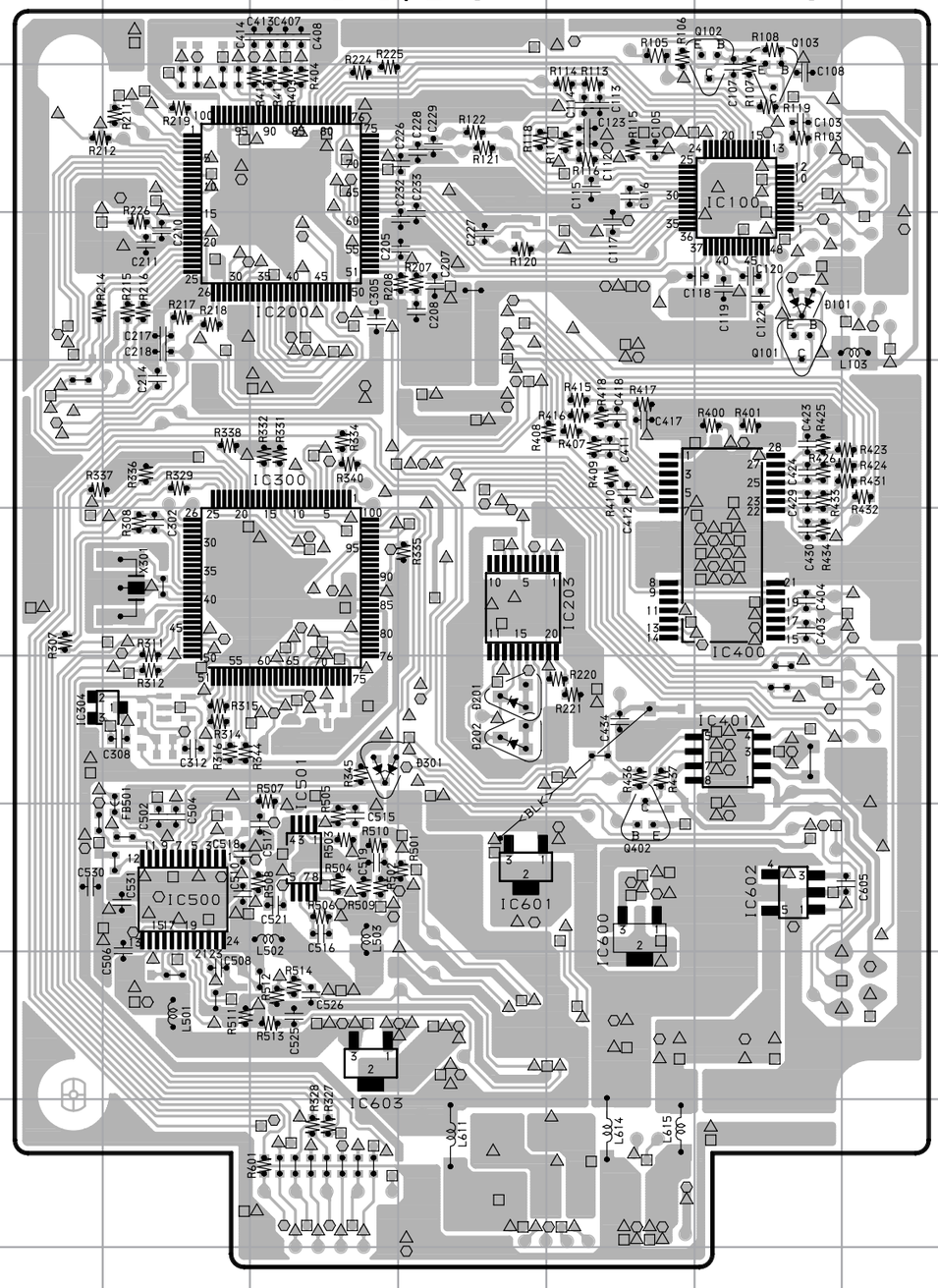




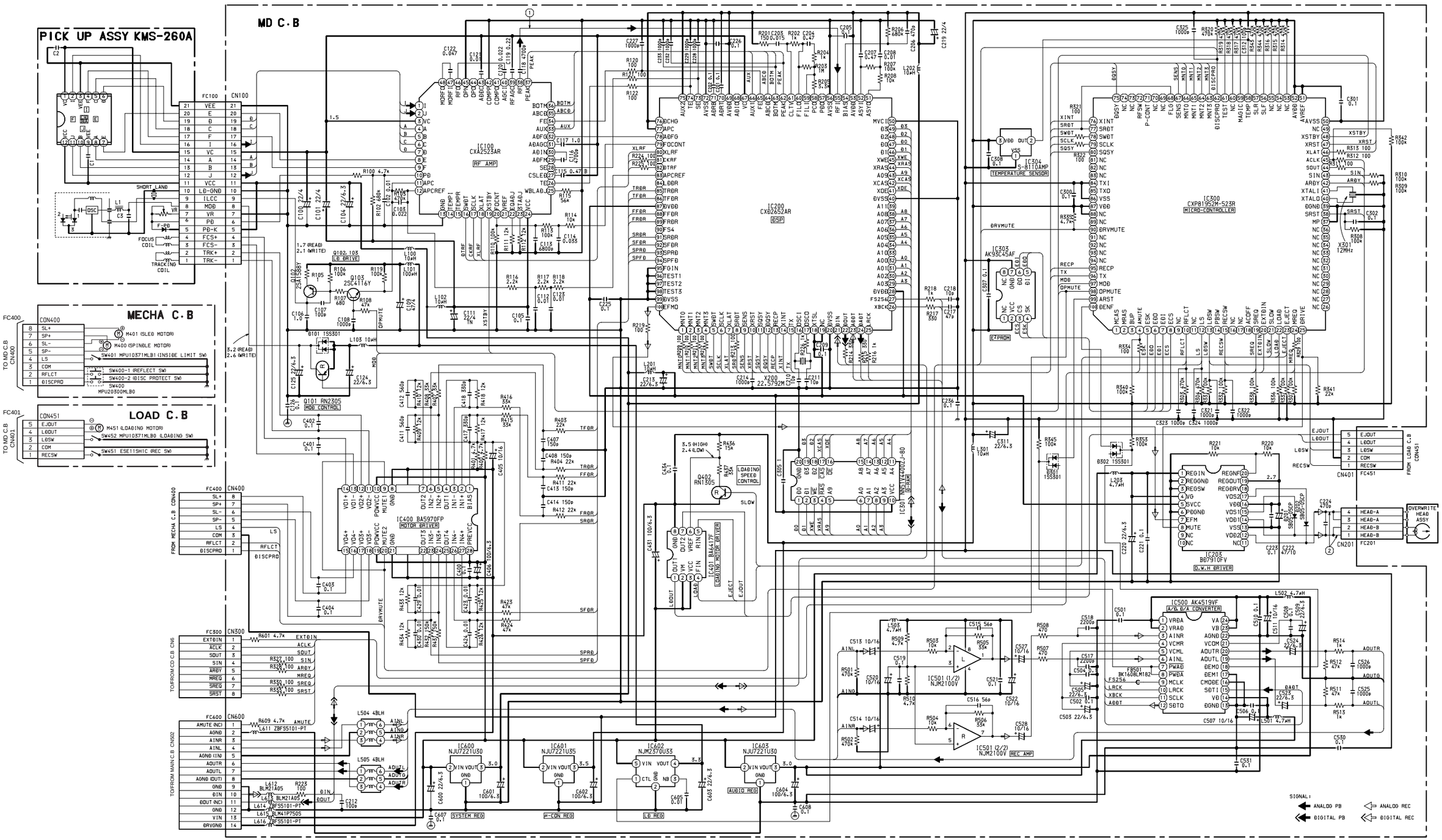
MD C.B (COMPONENT SIDE)



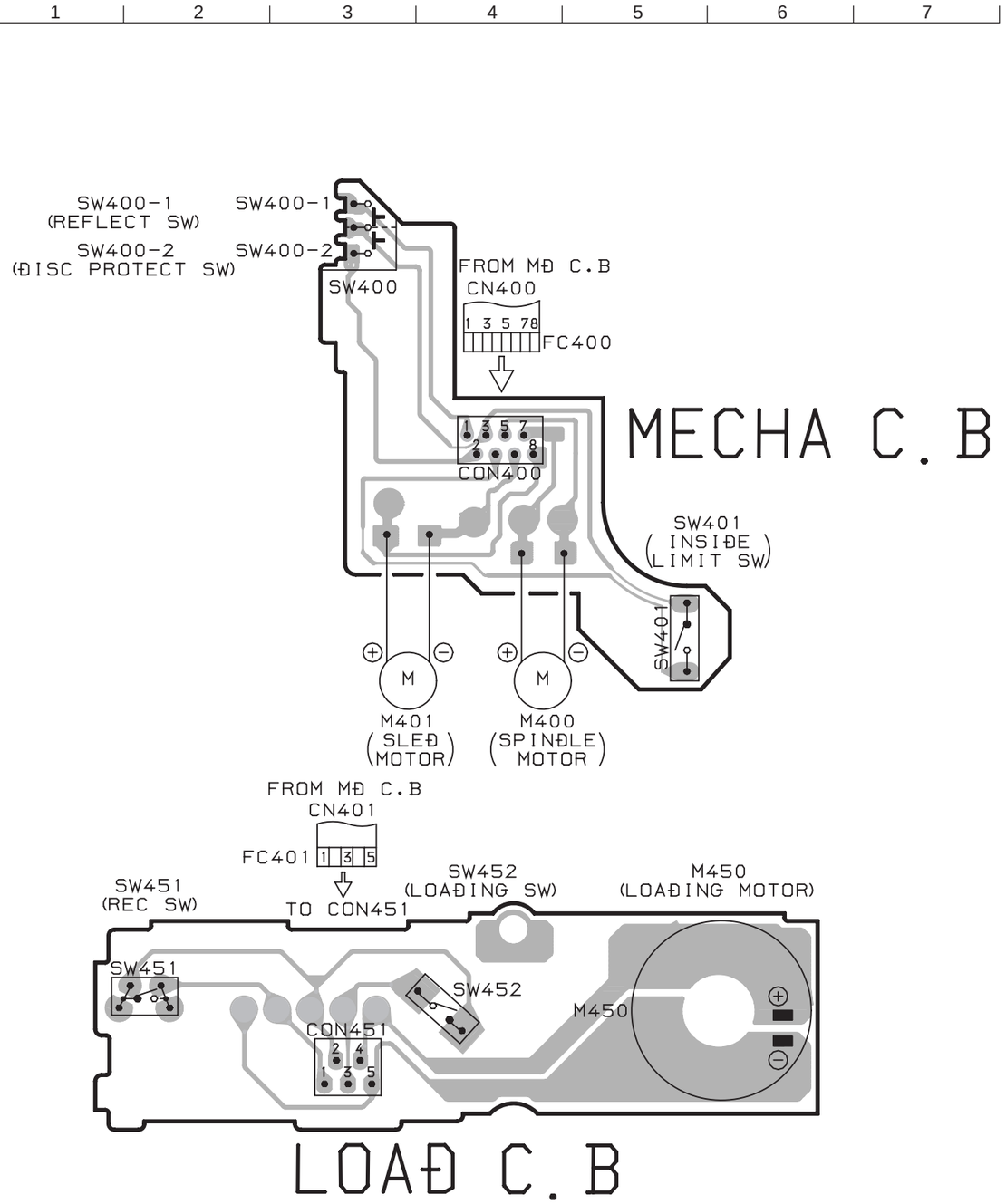
MD C.B (CONDUCTOR SIDE)



SCHEMATIC DIAGRAM-4 (MD)



WIRING-4 (MECHANISM)



TEST MODE

1. CD Test Mode

1-1. How to Start Up the CD Test Mode

While pressing the “CD OPEN/CLOSE” button, connect the AC plug to the power outlet.
When the CD test mode is started up, When the CD test mode starts up, all displays turn on.

Note: When the PANEL, TOP has been removed for each CHAS, GEAR, be sure to short pin-4 and pin-5 of the connector CN3 on the CD board in order to recognize that the CD lid is closed.

1-2. Releasing the CD Test Mode

Remove the shorting between pin-4 and pin-5 of the connector CN3 on the CD board to return to the original setup.
Then press the POWER button or the FUNCTION button, or remove the AC plug from the power outlet to release the CD test mode.

1-3. Function Description of the Test Mode

MODE	Operation	Indication on display	Function	Contents
Start mode	Starting up the test mode	CD TEST		
Search mode	■	CD	Continuous focus searching. The pickup lens repeats the full-swing up-down motion * Note	Check APC circuit. Laser current measurement. Focus error waveform check.
Play mode	▶	Track No. and playing time are displayed	Normal playback. When the TOC reading is not possible, the same movement as in the search mode.	Focus servo. Tracking servo. CLV servo. Sled servo.
Traverse mode	⏸	Track No. and playing time flash	Playback PAUSE mode	Tracking servo OFF.
Sled mode	▶▶ ◀◀	CD TEST	The pickup moves to the innermost track The pickup moves to the outermost track	Sled servo. Check operation of the mechanism.

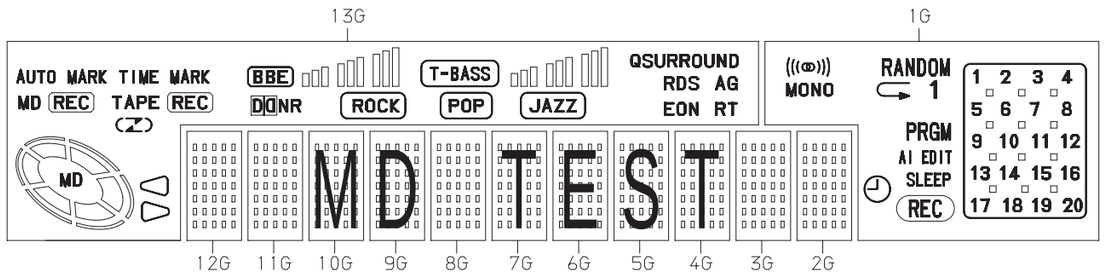
Note: If the focus search operation is continued for 10 minutes or longer, heating of the driver IC is accumulated to trigger the protection circuit that will stop operation of the CD system. .Turn off the main power and re-start operation about 10 minutes later.

2. MD Test Mode

Note: Remote control unit is used to activate most of the MD TEST mode operations in the XR-MD200. (Only the two buttons are located in the XR-MD200 that cannot be found in the remote control unit. These two buttons are the “MD EJECT” button that is used to initiate the MD test mode and the ● button that is used to enter “REC Analog (digital)”. Therefore, the MD test mode is described as follows on the premise of using a remote control unit.

2-1. How to Start Up the MD Test Mode

While pressing the “MD EJECT” button, connect the AC plug to the power outlet.
About three seconds later after the MD test mode has started up, the following message appears and the MD test mode becomes operable.



Note: 1. If operation of the mechanism shows any abnormality during the test mode, disconnect the AC plug immediately.
2. The playback and recording operations are not possible during the test mode.
3. There can be a case that a disc cannot be inserted. In such a case, insert the disc a little and press the "CD → MD DIRECT REC" button. The disc can be inserted to the very end.
4. "REC Analog" is switched to "REC Digital" by pressing the following buttons in order: ■ button → II button → ● button (main unit).

2-2. How to Exit the CD Test Mode

1) Press the "MD EJECT" button to remove the disc.
2) Disconnect the AC plug from the power outlet.

* If the machine exits the MD test mode by any methods other than the procedure as described above, the machine may operate abnormally when the POWER is turned on next time.
In such a case, disconnect the AC plug.

2-3. Operation Check Mode

1) Checks after the test mode has started up
The following playback audio circuits can be checked.

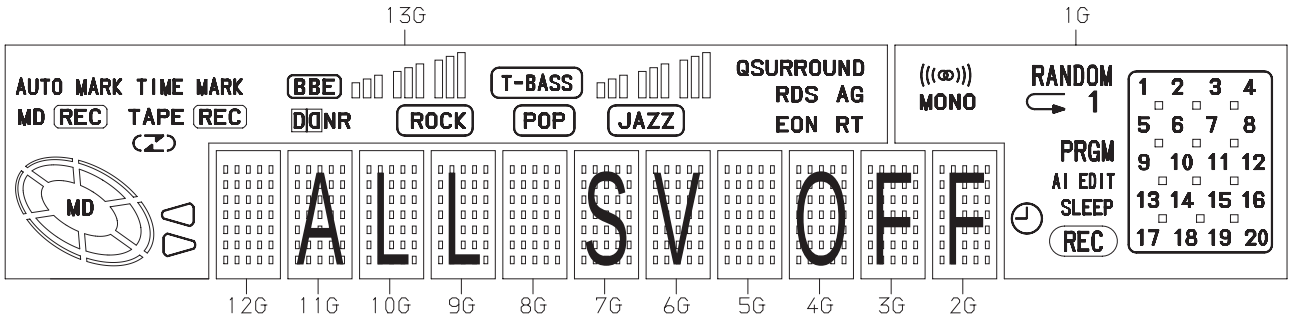
- The circuits that can be checked: ..... DAC, LINE AMP, HEADPHONES AMP
- Output level: ..... 1 kHz, -23 dB

2) Switch status check
ON/OFF statuses of the respective switches of the machine and mechanism can be checked on display.

Switch Name	Switch State	Indication on Display	Usable disc
REC PROTECT	When the write-protection tab of a disc is closed to ON	ROCK	Record/playback disc
REFRECT	When the high reflection disc (CD) is used	POP	Playback only disc
INNER	When the pickup is the positioned at the innermost track (when the LIMIT switch is ON)	JAZZ	—

2-4. How to Switch to Servo Standby Mode

When the MD test mode has been established, the mode is changed to the servo standby mode and "ALL SV OFF" is displayed by pressing the ■ (CLEAR) button. The following various check modes can be entered from this mode. Returns to "ALL SV OFF" by pressing the ■ button.



2-5. Checking the Sled Operation

1) Pickup moves to the outmost track by pressing the ▸▸ (F.SKIP) in the "ALL SV OFF" state. The message "T.SLED FWD" is displayed.
2) Pickup moves to the innermost track by pressing the ◂◂ (B.SKIP) in the "ALL SV OFF" state. The message "T.SLED FWD" is displayed.

2-6. Checking the Laser Output

1) The laser power output level can be switched by every pressing of the "EDIT" (SHIFT+9) in the "ALL SV OFF state". The laser power output is repeatedly changed in the following order of: OFF → LASER READ → LASER1/2 → LASER WRITE → OFF. The displays are shown as described by the following table.

MODE	Indication on display
OFF	ALL SV OFF
LASER READ	LASER READ
LASER 1/2 WRITE	LASER 1/2
LASER WRITE	LASER WRITE

2) After confirming the message, press the ■ button to turn off the "ALL SV OFF" display.

2-7. Checking Operation of OWH (Over Write Head)

The OWH can be moved up and down by pressing the "CD → MD DIRECT REC" and the "EJECT" buttons in the state of loading-completed.

"CD → MD DIRECT REC" button ..... OWH DOWN
"EJECT" button ..... OWH UP

Note: Do not move down the OWH down when the high reflection disc (CD) is in use.

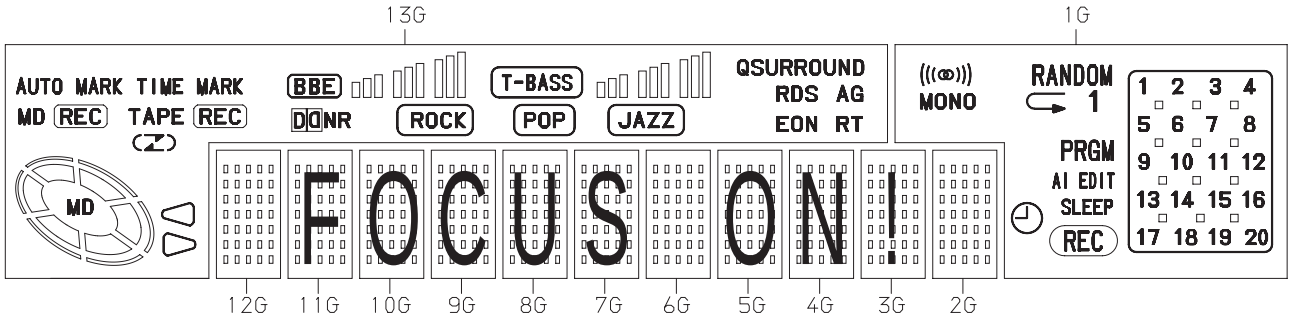
2-8. Checking the Servo Operation

- Checking the focus search spindle kick

1) The focus search operation and the spindle kick operation can be performed continually by pressing ◄ ► (PLAY) button from the "ALL SV OFF" state without inserting a disc. During this check, the message "FOCUS SRCH" is displayed.
2) After checking these operations, press the ■ button to return to the "ALL SV OFF" state.

- Checking the focus servo

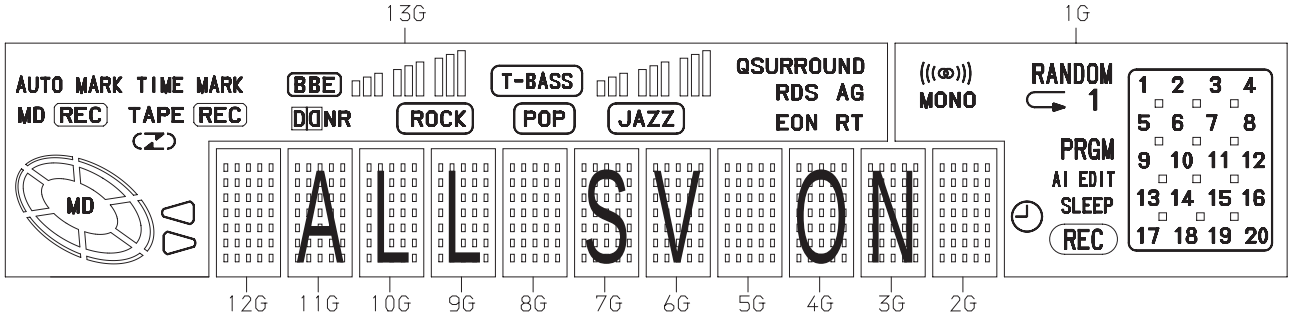
1) Insert the test DISC.
2) Move the optical pickup to the center track or its around of a disc using the ▸▸ and the ◂◂ buttons.
3) Press the "MODE" button until the following servo mode is selected in accordance with the inserted DISC.
   * MO DISC (MO) ..... Select the "SELECT GRV" indication on the display.
   * PIT DISC (CD) ..... Select the "SELECT PIT" indication on the display.
4) Press the ► button.
   When the focus servo is operating normally, the message "FOCUS ON!" is displayed after "FOCUS SRCH".



5) After the checking is completed, press the ■ button to return to the "ALL SV OFF" state.

- Checking that the all servo loops are turned ON

1) The tracking servo and the sled servo are turned on and all servo loops work when the "MD MARK" (SHIFT+10) button is pressed in the state of "FOCUS ON!".
   When all servo loops are normal, "ALL SV ON" is displayed.



2) After the checking is completed, press the ■ button to return to the "ALL SV OFF" state.

2-9. Adjustment Mode

Name of adjustment: Temperature compensation adjustment
Test point: Check the indication on the display.
Jig: Thermometer
Adjustment procedure:

1) Start up the MD test mode and press the ■ button to show the message "ALL SV OFF" on display.
2) Press the "DISPLAY" (SHIFT+4) button to switch the display to "TEMP=$◇◇".
3) Press the ❚❚ (PAUSE) button to switch the display to "TEMP + **c: +00".
4) Place the thermometer near the MD mechanism to measure the room temperature.
5) Adjust the indication value on display until the room temperature is the same as the indicated temperature ** on the display using the ▶▶ and ◀◀ buttons. After adjustment is complete, press the "MD MARK" (SHIFT+10) button.
6) After the adjustment is completed, press the ■ button to return to the "ALL SV OFF" state.
7) After the above settings are completed, reduce or add the value indicated by the sharp sign (##) of "TEMP + **c: +00" from or to the value indicated by the asterisk (**) of "TEMP + **c: +00". The calculated value must be the room temperate.

Note: If the room temperature cannot be measured, do not adjust the above item.

3. Laser Power Adjustment

Test point: Pickup laser output
Jig: Laser power meter
Adjusting procedure:

1) Press the "EDIT" (SHIFT+8) button three times in the state of "ALL SV OFF" in order to switch the display to "LASER WRITE".
2) Press the ❚❚ button once to show the "LASER = $**".
3) Measure the laser output of the pickup unit using a laser power meter. Adjust the laser output value for 6.8±0.03 mW by pressing the ▶▶ and ◀◀ buttons. After adjustment, press the "MD MARK" (SHIFT+10) button.
4) After the adjustment is completed, press the ■ button to return to the "ALL SV OFF" state.

Note: If the laser output exceeds 7.0 mW, the pickup may be damaged.

4. Auto Sequence Adjustment (EFB Adjustment, IVR Adjustment, Focus AGC Adjustment and Tracking AGC Adjustment)

Test disc: MDW-60, TGYS-1
When using the MO disc for adjustment:

1) Insert the test disc MDW-60.
2) Press the ■ button to show "ALL SV OFF" on display.
3) Press the "MODE" button to show "SELECT GRV" on display.
4) When the "MD" button is pressed, "AUTO ADJ" is displayed. When the adjustment is completed, "DONE" is displayed. (If "FAILED" is displayed, it shows that the adjustment has failed and is not performed.)
5) After the adjustment is completed, press the ■ button to return to the "ALL SV OFF" state.

Note: 1. Be sure to use the clean disc because the adjustment cannot be ensured if the dirty disc or the scratches on a disc is used.
2. Be sure to use an MO disc that is permitted to record a new data because the MO disc is tested by writing power and a part of the recorded data is erased.

How to check the IVR, EFB, Focus/Tracking/Sled Gains

① Move the optical pickup to the center track or its around of a disc using the ▶▶ and the ◀◀ buttons.
② Press the ▶ button to show "FOCUS ON!" on display.
③ Press the "ENTER" button to switch the mode to "ALL SV ON".
④ Press the ■ button and press twice the "DISPLAY" button.
Check that the indication value on the display "IV$**:EF$◇◇" is within the range as follows below.
"**" 03-07
"◇◇" 09-12
⑤ Press the "DISPLAY" (SHIFT+4) button again.
Check that the indication value on the display "Gf**t##s△△" is within the following ranges.
"**" ..... 20 to 40
"##" ..... 15 to 35
"△△" ..... 15 to 35
⑥ After the checking is completed, press the ■ button to return to the "ALL SV OFF" state.

When using the PIT disc for adjustment:

1) Insert the test disc TGYS-1.
2) Press the ■ button to show “ALL SV OFF” on display.
3) When the “MD function” button is pressed, “AUTO ADJ” is shown on display. When adjustment is completed, “DONE” is displayed. (If “FAILED” is displayed, it shows that the adjustment has failed and is not performed.)
4) After the adjustment is completed, press the ■ button to return to the “ALL SV OFF” state.

Checking Method of IVR, EFB, Focus/Tracking/Sled Gain

Perform the same operation as that of the “When using the MO disc for adjustment” and confirm that the values on the display are within the following ranges.

“IVR” ..... 13 to 17
“EFB” ..... 09 to 12
“Focus gain” ..... 2A to 45
“Tracking gain” ..... 20 to 40
“Sled gain” ..... 20 to 40

5. Checking Focus Servo and Error Rate (PIT Disc)

1) Insert the test disc TGYS-1.
2) Move the optical pickup to the center track or its around of a disc using the ▶▶ and the ◀◀ buttons.
3) Press the “MODE” button to show “SELECT PIT” on the display.
4) Press the ▶ button to show “FOCUS ON!” on the display..
5) Press the “MD MARK” (SHIFT+10) button to show “ALL SV ON” on the display. Then press the “DISPLAY” (SHIFT+4) button once to check that the address display advances with regularity.
6) Press the “DISPLAY” (SHIFT+4) button again to show the playback error rate on display and check that the value shown by the asterisks (****) of “Er****:000” is “0030” or less.
7) After the adjustment is completed, press the ■ button to return to the “ALL SV OFF” state.

6. Checking Record/Playback Error Rate (MO Disc)

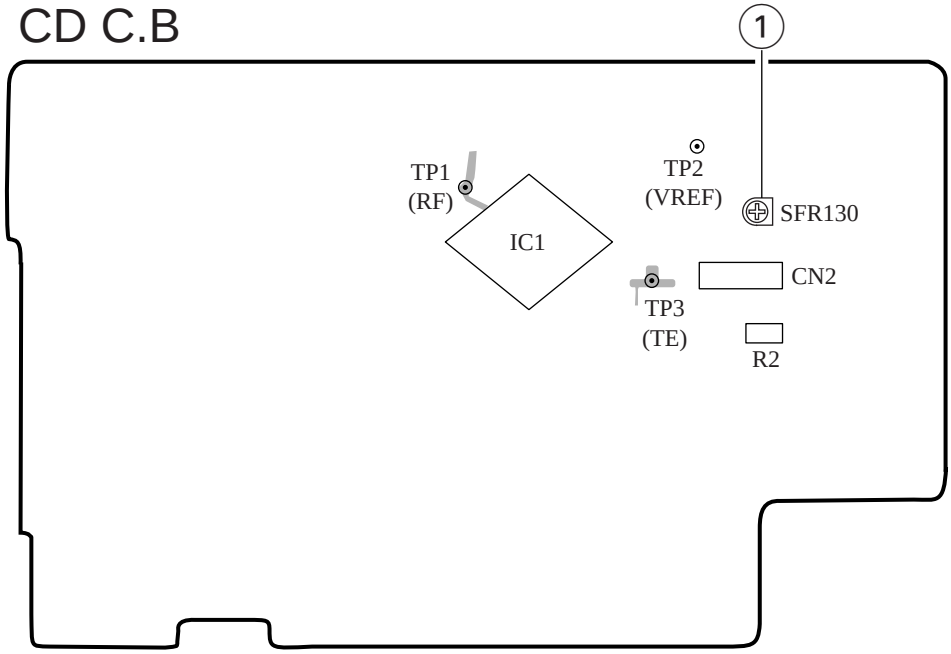
1) Insert the test disc MDW-60.
2) Move the optical pickup to the center track or its around of a disc using the ▶▶ and the ◀◀ buttons.
3) Press the “CD function” button to start recording from 600 cluster.
4) After about 15 seconds of recording, press the ■ button to show “ALL SV OFF” on display.
5) Press the “AUX/D-IN/TAPE” button to show “ADR****c##s”. When the address indication on display shows the record start position, press the “DISPLAY” button (SHIFT+4) to show “Er◇◇◇◇:◆◆◆◆”. Confirm that the value of ◇◇◇◇ is 0020 or less under this setup.
6) After adjustment, press the ■ button to show “ALL SV OFF” on display.

SERVICE JIG AND TOOLS

Use the following jigs when opening the C.B boards.

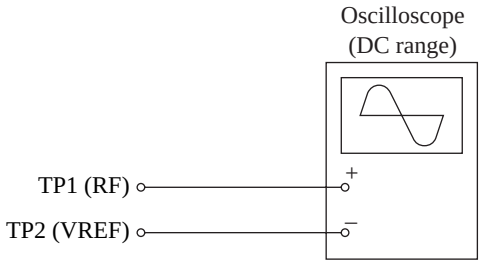
	NAME	PART NO
CD	JIG, P-CD BY TORIKOSHI	SV-J00-018-010
	FF-CABLE, 16P 1.0 250mm	87-CE1-640-010
MD	FFC, 8P-1.0P	SV-J00-043-010
	FFC, 14P-1.0P	SV-J00-044-010

CD C.B

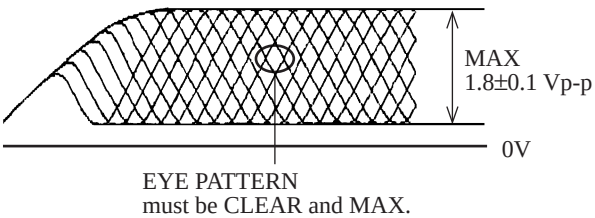


Note:
- Connect a probe (10: 1) of the oscilloscope test point for adjustment.
- Connect ground (⊖) terminal of oscilloscope probe to TP3 (VREF) for all adjustment.

1. Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing the optical block.

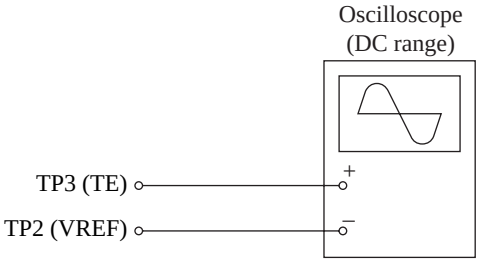


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Adjust SFR103 so that RF signal of the test point TP1 (RF) is MAX and CLEARREST.

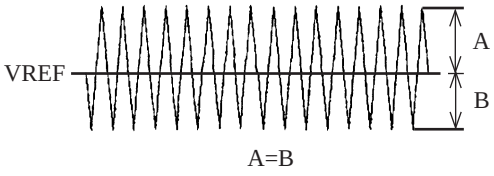


VOLT/DIV: 0.5V
TIME/DIV: 0.5µS

2. Tracking Balance Check

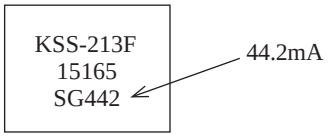


1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782 (YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Laser Current Check
The current of the laser signal can be checked with the voltages on both sides of R2 (voltage across 10Ω).
The difference for the specified value shown on the label must be within ± 6.0mA.



$$\text{Laser current Iop} = \frac{\text{Voltage across R2}}{10\Omega}$$

IC DESCRIPTION

IC, LC866548V-5M36

Pin No.	Pin Name	I/O	Description
1	O-MACMD	O	Command output to slave microprocessor.
2	I-$\overline{\text{SCMD}}$	I	Command input from slave microprocessor.
3	O-ARDY	O	Serial data send/receive preparation completion output for MD UNIT control. (TAPE REC MUTE output).
4	O-SREQ	O	Serial data transfer request for MD UNIT control. (FWD/RWD switching output during TAPE PLAY/REC).
5	I-MREQ	I	Serial data transfer request for MD UNIT control. (REC/PB switching output).
6	O-SURROUND	O	QSURROUND ON/OFF output.
7	O-SRST	O	Reset signal output to slave microprocessor.
8	O-VOLCTL	O	Connected to VOL/P.EQ IC M62439SP pin-⑪ CONT.
9	P36	O	NC.
10	O-COIN	O	Connected to CD DSP LC78622E pin-56 COIN and CD ASP LA9240M pin-52 DAT.
11	O-$\overline{\text{CKSFT}}$	O	Clock shift output. “L” at clock shift.
12	$\overline{\text{RST}}$	I	Microprocessor reset.
13	I-DRF	I	Connected to CD ASP LA9240M pin-54 DRF.
14	I-SQOUT	I	Connected to CD DSP LC78622E pin-55 SQOUT.
15	VSS1	—	GND.
16	CF1	I	5.76 MHz. Connected to oscillator.
17	CF2	O	
18	VDD1	—	Microprocessor power supply. (µ-com 5V).
19	I-$\overline{\text{HOLD}}$	I	Hold state detection. (A/D).
20, 21	I-KEY1, I-KEY2	I	KEY AD data input.
22	AN3	I	DECA MECA state detection input. (AD).
23	AN4	I	TAPE MUSIC SENSOR input. (A/D).
24	I-CDDSW	I	CD DOOR OPEN/CLOSE state detection input. (AD).
25	I-SPE	I	Spare level detection. (A/D).
26	P87	I	NC.
27	I-WRQ	I	Connected to CD DSP LC78622E pin-53 WRQ.
28	P72	I	NC.
29	I-RMC	I	Remote control signal input.
30-45	T0-T15	—	NC.
46	VDD3	—	Microprocessor power supply. (µ-com 5V).
47-49	PC0-PC2	I	DECK MECA state detection input.
50	PC3	I	Rotation detection of TAKE UP REEL of DECK MECA.
51	VP	—	Connected to negative polarity power supply -VFL for FL.
52	PC4	I	Rotation detection of TAKE UP REEL of DECK MECA.
53-55	PC5-PC7	I	NC.
56	I-AMST	I	INITIAL DIODE MATRIX input.
57	I-AM10K	I	
58	I-LW	I	
59	I-SW	I	

Pin No.	Pin Name	I/O	Description
60	I-OIRT	I	INITIAL DIODE MATRIX input.
61	I-RDS	I	
62	I-$\overline{\text{BBE}}$	I	
63	I-$\overline{\text{DOLBY}}$	I	
64	I-TAPE/$\overline{\text{MD}}$	I	
65	I-$\overline{\text{DEMO}}$	I	
66-71	PE2-PE7	I	NC.
72	VDD4	—	Microprocessor power supply. (µ-com 5V).
73	PF0	O	DECK MECA MAIN MOTOR control output.
74, 75	PF1, PF2	O	DECK MECA SUB control output.
76, 77	PF3, PF4	—	NC.
78	I-$\overline{\text{DOOR DET}}$	I	Over-current detection input to the CD DOOR MOTOR.
79, 80	PF6, PF7	—	NC.
81	O-CDDOPEN	O	CD DOOR OPEN control output.
82	O-CDDCLOSE	O	CD DOOR CLOSE control output.
83, 84	PG2, PG3	—	NC.
85	O-BBEA	O	BBE LEVEL switching output.
86	O-BBEB	O	
87	O-CD	O	Power supply control output of CD block.
88	O-$\overline{\text{MDRST}}$	O	MD UNIT 7ZG-9A reset signal output.
89	VSS2	—	GND.
90	VDD2	—	Microprocessor power supply. (µ-com 5V).
91	O-RWC	O	Connected to CD DSP LC78622E pin-59 RWC and CD ASP LA9240M pin-53 CF.
92	O-$\overline{\text{CQCK}}$	O	Connected to CD DSP LC78622E pin-57 $\overline{\text{CQCK}}$ and CD ASP LA9240M pin-51 CL.
93	O-L.O.M	O	LINE OUT MUTE output.
94	P07	—	Not used.
95	O-SIN	O	Serial data output for MD UNIT control.
96	I-SOUT	I	Serial data input for MD UNIT control.(FWD REC BIAS control output).
97	I-ACLK	I	Serial clock input for MD UNIT control. (RWD REC BIAS control output).
98	O-MASO	O	Serial data output to slave microprocessor.
99	I-$\overline{\text{MASI}}$	I	Serial data input from slave microprocessor.
100	O-MACLK	O	Transfer clock output to slave microprocessor.

IC, LA9241ML

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Pin to which external pickup photo diode is connected. RF signal is created by adding with the FIN1 pin signal. FE signal is created by subtracting from the FIN1 pin signal.
2	FIN1	I	Pin to which external pickup photo diode is connected.
3	E	I	Pin to which external pickup photo diode is connected. TE signal is created by subtracting from the F pin signal.
4	F	I	Pin to which external pickup photo diode is connected.
5	TB	I	DC component of the TE signal is input.
6	TE–	I	Pin to which external resistor setting the TE signal gain is connected between the TE pin.
7	TE	O	TE signal output pin.
8	TESI	I	TES “Track Error Sense” comparator input pin. TE signal is passed through a band-pass filter then input.
9	SCI	I	Shock detection signal input pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD–	I	Pin to which external tracking phase compensation constants are connected between the TD and VR pins.
13	TD	I	Tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD–	I	Pin to which external focusing phase compensation constants are connected between the FD and FA pins.
18	FA	I	Pin to which external focusing phase compensation constants are connected between the FD– and FA– pins.
19	FA–	I	Pin to which external focusing phase compensation constants are connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE–	I	Pin to which external FE signal gain setting resistor is connected between the FE pin.
22	AGND	—	Analog signal GND.
23	NC	—	No connection.
24	SP	O	Single ended output of the CV+ and CV– pin input signal.
25	SPG	I	Pin to which external spindle gain setting resistor in 12 cm mode is connected.
26	SP–	I	Pin to which external spindle phase compensation constants are connected together with SPD pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Pin to which external sled phase compensation constants are connected.
29	SLD	O	Sled control signal output pin.
30, 31	SL–, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP–, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input from DSP. Low gain when TGL = H.
35	TOFF	I	Tracking off control signal input pin from DSP. Off when TOFF = H.

Pin No.	Pin Name	I/O	Description
36	TES	O	Pin from which TES signal is output to DSP.
37	HFL	O	“High Frequency Level” is used to judge whether the main beam position is on top of bit or on top of mirror.
38	SLOF	I	Sled servo off control input pin.
39, 40	CV–, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS–	I	RF gain setting and EFM signal 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	“Slice Level Control” is the output pin which controls the RF signal data slice level by DSP.
44	SLI	I	Input pin which control the data slice level by the DSP.
45	DGND	—	Digital system GND.
46	FSC	O	Output pin to which external focus search smoothing capacitor is connected.
47	TBC	I	“Tracking Balance Control” EF balance variable range setting pin.
48	NC	—	No connection.
49	DEF	O	Disc defect detector output pin.
50	CLK	I	Reference clock input pin. 4.23 MHz of the DSP is input.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	“Detect RF” RF level detector output.
55	FSS	I	“Focus Search Select” focus search mode (± search/+ search) select pin.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	—	Pin to which external bypass capacitor for reference voltage is connected.
58	VR	O	Reference voltage output pin.
59	LF2	I	Disc defect detector time constant setting pin.
60	PH1	I	Pin to which external capacitor for RF signal peak holding is connected.
61	BH1	I	Pin to which external capacitor for RF signal bottom holding is connected.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

IC, LC78622ED

Pin No.	Pin Name	I/O	Description	
1	DEFI	I	Defect sense signal (DEF) input pin. (Connect to 0V when not used).	
2	TAI	I	For PLL.	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
3	PDO	O		Phase comparator output pin to control external VCO.
4	VVSS	—		GND pin for built-in VCO. Be sure to connect to 0V.
5	ISET	I		Pin to which external resistor adjusting the PD0 output current.
6	VVDD	—		Power supply pin for built-in VCO.
7	FR	I		Pin for VCO frequency range adjustment.
8	VSS	—	Digital system GND. Be sure to connect to 0V.	
9	EFMO	O	For slice level control.	EFM signal output pin.
10	EFMIN	I		EFM signal input pin.
11	TEST2	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
12, 13	CLV+, CLV–	O	Disc motor control output. Three level output is possible using command.	
14	V/$\overline{P}$	O	Rough servo or phase control automatic selection monitoring output pin. Rough servo at H. Phase servo at L.	
15	HFL	I	Track detect signal input pin. Schmidt input.	
16	TES	I	Tracking error signal input pin. Schmidt input.	
17	TOFF	O	Tracking OFF output pin.	
18	TGL	O	Tracking gain selection output pin. Gain boost at L.	
19, 20	JP+, JP–	O	Track jump control signal output pin. Three level output is possible using command.	
21	PCK	O	EFM data playback clock monitoring pin 4.3218 MHz when phase is locked in.	
22	FSEQ	O	Sync signal detection output pin. H when the sync signal which is detected from EFM signal and thesync signal which is internally generated agree.	
23	VDD	—	Digital system power supply pin.	
24-28	SL+ - PUIN	I/O	General purpose input/output pin 1 to 5.	The pin is controlled by the serial data command from microprocessor. When the pin is not used, set the pin to the input terminal and connect to 0V, or alternately set the pin to output terminal and leave the pin open.
29	EMPH	O	De-emphasis monitor output pin. De-emphasis disc is being played back at H.	
30	C2F	O	C2 flag output pin.	
31	DOUT	O	DIGITAL OUT output pin. (EIAJ format).	
32, 33	TEST3, TEST4	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.	
34	N.C.	—	Not used. Set the pin to open.	
35	MUTEL	O	L-channel 1-bit DAC.	L-channel mute output pin.
36	LVDD	—		L-channel power supply pin.
37	LCHO	O		L-channel output pin.
38	LVSS	—		L-channel GND. Be sure to connect to 0V.
39	RVSS	—	R-channel 1-bit DAC.	R-channel GND. Be sure to connect to 0V.
40	RCHO	O		R-channel output pin.
41	RVDD	—		R-channel power supply pin.
42	MUTER	O		R-channel mute output pin.

Pin No.	Pin Name	I/O	Description
43	XVDD	—	Crystal oscillator power supply pin.
44	XOUT	O	Pin to which external 16.9344 MHz crystal oscillator is connected.
45	XIN	I	
46	XVSS	—	Crystal oscillator GND pin. Be sure to connect to 0V.
47	SBSY	O	Subcode block sync signal output pin.
48	EFLG	O	C1, C2, single and dual correction monitoring pin.
49	PW	O	Subcode P, Q, R, S, T, U and W output pin.
50	SFSY	O	Subcode frame sync signal output pin. Falls down when subcode enters standby.
51	SBCK	I	Subcode read clock input pin. Schmidt input. (Be sure to connected to 0V when not in use.)
52	FSX	O	Pin outputting the 7.35 kHz sync signal which is generated by dividing frequency of crystal oscillator.
53	WRQ	O	Subcode Q output standby output pin.
54	RWC	I	Read/write control input pin. Schmidt input.
55	SQOUT	O	Subcode Q output pin.
56	COIN	I	Command input pin from microprocessor.
57	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read input clock from SQOUT pin
58	$\overline{\text{RES}}$	I	LC78622 reset input pin. Set this pin to L once when the main power is turned on.
59	TST11	O	Test signal output pin. Use this pin as open (normally L output).
60	16M	O	16.9344 MHz output pin.
61	4.2M	O	4.2336 MHz output pin.
62	TEST5	I	Test signal input pin with built-in pull-down resistor. Be sure to connect to 0V.
63	$\overline{\text{CS}}$	I	Chip select signal input pin with built-in pull-down resistor. Be sure to connect to 0V while it is not controlling.
64	TEST1	I	Test signal input pin without built-in pull-down resistor. Be sure to connect to 0V.

Note: The same potential must be applied to the respective power supply terminals. (VDD, VVDD, LVDD, RVDD, XVDD)

IC, CXD2652AR

Pin No.	Pin Name	I/O	Description
1	MNT0	O	Monitor output terminal.
2	MNT1	O	Monitor output terminal.
3	MNT2	O	Monitor output terminal.
4	MNT3	O	Monitor output terminal.
5	SWDT	I	Microprocessor serial interface data input.
6	SCLK	I	Microprocessor serial interface shift clock input.
7	XLAT	I	Microprocessor serial interface latch input. Latched at falling down edge.
8	SRDT	O	Microprocessor serial interface data output.
9	SENS	O	The terminal which outputs internal status in accordance with the address of the microprocessor serial interface.
10	XRST	I	Reset input. L: reset.
11	SQSY	O	Disc sub code Q sync/ADIP sync output.
12	DQSY	O	Subcode Q sync output of U-bit CD or MD format when the DIGITAL IN source is CD or MD.
13	RECP	I	Laser power selection input. H: Recording power, L: Playback power.
14	XINT	O	Interrupt request output terminal. L is output when interrupt status is generated.
15	TX	I	Record data output enable signal input terminal. H: enable.
16	OSCI	I	Crystal oscillator circuit input terminal.
17	OSCO	O	Crystal oscillator circuit output terminal. (Inverted output of OSCI).
18	XTSL	I	OSCI terminal input frequency selection. H: 512 Fs (22.5792 MHz), L: 1024 Fs (45.1584 MHz).
19	NC	—	Not connected.
20	DVSS	—	Digital GND.
21	DIN	I	Digital audio interface signal input.
22	DOUT	O	Digital audio interface signal output.
23	ADDT	I	Analog recording signal input terminal. (External A/D converter output is connected to this terminal).
24	DADT	O	RECORD monitor output/decode audio data output.
25	LRCK	O	LRCK (44.1 kHz) output terminal to external audio block.
26	XBCK	O	Bit clock output (2.8224 kHz) output terminal to external audio block.
27	FS256	O	256 Fs output. (11.2896 MHz).
28	DVDD	—	Digital power supply.
29	A03	O	Address output to external DRAM.
30	A02	O	Address output to external DRAM.
31	A01	O	Address output to external DRAM.
32	A00	O	Address output to external DRAM.
33	A10	O	Address output to external DRAM. (Not used).
34	A04	O	Address output to external DRAM.
35	A05	O	Address output to external DRAM.
36	A06	O	Address output to external DRAM.
37	A07	O	Address output to external DRAM.

Pin No.	Pin Name	I/O	Description
38	A08	O	Address output to external DRAM.
39	A11	O	Address output to external DRAM. (Not used).
40	DVSS	—	Digital GND.
41	XOE	O	External DRAM output enable.
42	XCAS	O	$\overline{\text{CAS}}$ output to external DRAM.
43	A09	O	Address output to external DRAM.
44	XRAS	O	$\overline{\text{RAS}}$ output to external DRAM.
45	XWE	O	Write enable for external DRAM.
46	D1	I/O	Data bus for external DRAM.
47	D0	I/O	Data bus for external DRAM.
48	D2	I/O	Data bus for external DRAM.
49	D3	I/O	Data bus for external DRAM.
50	MVCI	I	External VCO (784 fs) clock input.
51	ASYO	O	Playback EFM full swing output. (L: VSS, H: VDD).
52	ASYI	I	Playback EFM comparator slice voltage input.
53	AVDD	—	Analog GND.
54	BIAS	I	Playback EFM comparator bias current input.
55	RFI	I	Playback EFM RF signal input.
56	AVss	—	Analog power supply.
57	PDO	O	Phase comparison output to EFM decoder analog PLL.
58	PCO	O	Phase comparison output to the master PLL of playback digital PLL and to the recording EFM PLL.
59	FILI	I	Filter input to the master PLL of playback digital PLL and to the recording EFM PLL.
60	FILO	O	Filter output to the master PLL of playback digital PLL and to the recording EFM PLL.
61	CLTV	I	Internal VCO control voltage of the master PLL of playback digital PLL and of the recording EFM PLL.
62	PEAK	I	Optical light volume’s peak hold signal input.
63	BOTM	I	Optical light volume’s bottom hold signal input.
64	ABCD	I	Optical light volume signal input.
65	FE	I	Focus error signal input.
66	AUX1	I	Auxiliary input 1.
67	VC	I	Center terminal voltage input.
68	ADIO	O	Monitor output of A/D converter input signal.
69	AVDD	—	Analog power supply.
70	ADRT	I	Voltage input of the upper limit of the A/D converter operation range.
71	ADRB	I	Voltage input of the lower limit of the A/D converter operation range.
72	AVSS	—	Analog GND.
73	SE	I	Sled error signal input.
74	TE	I	Tracking error signal input.
75	AUX2	I	Auxiliary input 2.

Pin No.	Pin Name	I/O	Description
76	DCHG	I	Connected to the low impedance power supply.
77	APC	I	Error signal input to the laser digital APC.
78	ADFG	I	ADIP2 binary-converted FM signal (22.05±1 kHz) input.
79	F0CNT	O	Current source setting output terminal to CXA2523.
80	XLRF	O	Latch output for CXA2523 control. Latched at rise-up.
81	CKRF	O	Shift clock output for CXA2523 control.
82	DTRF	O	Data output for CXA2523 control.
83	APCREF	O	Reference PWM output to laser APC.
84	LDDR	O	PWM output to laser digital APC. (Not used).
85	TRDR	O	Tracking servo drive PWM output. (-).
86	TFDR	O	Tracking servo drive PWM output. (+).
87	DVDD	—	Digital power supply.
88	FFDR	O	Focus servo drive PWM output. (+).
89	FRDR	O	Focus servo drive PWM output. (-).
90	FS4	O	4 fs output. (176.4 kHz).
91	SRDR	O	Sled servo drive PWM output. (-).
92	SFDR	O	Sled servo drive PWM output. (+).
93	SPRD	O	Spindle servo drive PWM output. (PWM (-) or negative polarity).
94	SPFD	O	Spindle servo drive PWM output. (PWM (+) or PWM absolute value).
95	FGIN	I	FG input to spindle CAV servo.
96	TEST1	I	Test pin. Connected to GND.
97	TEST2	I	Test pin. Connected to GND.
98	TEST3	I	Test pin. Connected to GND.
99	DVSS	—	Digital GND.
100	EFMO	O	Low signal during playback. EFM (encode data) output: during recording.

IC, CXA2523AR

Pin No.	Pin Name	I/O	Description
1	I	I	Input “I” RF signal converted to I-V.
2	J	I	Input “J” RF signal converted to I-V.
3	VC	O	Output voltage for VCC/2.
4	A	I	Input current for main beam servo signal A.
5	B	I	Input current for main beam servo signal B.
6	C	I	Input currentt for main beam servo signal C.
7	D	I	Input current for main beam servo signal D.
8	E	I	Input current for side beam servo signal E.
9	F	I	Input current for side beam servo signal F.
10	PD	I	Input beam spectrum monitor signal.
11	APC	O	Output laser APC.
12	APCREF	I	Input reference voltage for laser power setting.
13	GND	—	GND.
14	TEMPI	I	Temperature sensor connection pin. (Not used)
15	TEMPR	I	Temperature sensor connection pin. Output reference voltage. (Not used)
16	SWDT	I	Input micro-processor serial interface data.
17	SCLK	I	Input micro-processor serial interface shift clock.
18	XLAT	I	Input micro-processor serial interface latch. “L”: Latch.
19	XSTBY	I	Standby setting pin. “H”: Normal mode, “L”: Standby.
20	FOCNT	I	Internal current setting pin.
21	VREF	O	Output reference voltage. (Not used)
22	EQADJ	I/O	EQ central frequency setting pin.
23	3TADJ	I/O	BPF3T central frequency setting pin.
24	VCC	—	Power supply pin.
25	WBLADJ	I/O	BPF22 central frequency setting pin.
26	TE	O	Output tracking error signal.
27	CSLED	—	LPF capacitor connection pin for SLED error signal.
28	SE	O	Output SLED error signal.
29	ADFM	O	Output ADIP FM signal.
30	ADIN	I	Input ADIP signal comparator.
31	ADAGC	—	ADIPAGC capacitor connection pin.
32	ADFG	O	Output ADIP2 binary data signal.
33	AUX	O	13 output / Output temperature signal. Switched by serial command.
34	FE	O	Output focus error signal.
35	ABCD	O	Output beam spectrum signal for main beam servo detector.
36	BOTM	O	Output bottom hold signal for RF/ABCD.
37	PEAK	O	Output peak hold signal for RF/ABCD.
38	RF	O	RF equalizer output pin.
39	RF AGC	—	RFAGC capacitor connection pin.
40	AGCI	I	RFAGC input pin.
41	COMPO	O	User comparator output pin. (Not used)

Pin No.	Pin Name	I/O	Description
42	COMPP	I	User comparator non-inverted input pin. (Connected to GND)
43	ADDC	I/O	Capacitor connection pin for ADIP amplifier on return circuit.
44	OPO	O	Output pin for user operational amplifier. (Not used)
45	OPN	I	Non-inverted input pin for user operational amplifier.
46	RFO	O	RF amplifier output pin. Check point for eye pattern.
47	MORFI	I	Input pin where Groove RF signal is AC coupled.
48	MORFO	O	Output pin for Groove RF signal.

IC, CXP81952M

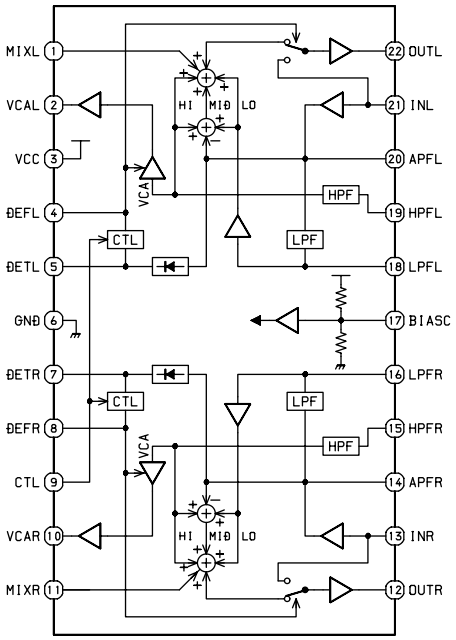
Pin No.	Pin Name	I/O	Description
1	MCAS	—	Not used.
2	MRAS	—	
3	BUP	—	
4	AMUTE	O	Audio mute signal output.
5	ESK	O	Serial clock output for EEPROM interface.
6	EDO	O	Serial data output for EEPROM interface.
7	EDI	I	Serial data input for EEPROM interface.
8	ECS	O	EEPROM interface chip select signal output.
9	—	—	Not used.
10	RFLCT	I	DISC reflectance factor detection switch input.
11	—	—	Not used.
12	LS	I	Optical pickup inner circumference detection switch input.
13	LDSW	I	Loading mechanism, EJECT position detection switch input.
14	PBSW	I	Loading mechanism, PB position detection switch input.
15	RECSW	I	Loading mechanism, RECORD position detection switch input.
16	—	—	Not used.
17	—	—	
18	ACOFF	—	
19	SREQ	I	System control send request signal input for system control interface.
20	EXTDIN	O	External DIGITAL-IN enable signal output.
21	SLOW	O	Loading mechanism speed control signal input.
22	LOAD	O	Loading mechanism operational direction control signal input 1.
23	EJECT	O	Loading mechanism operational direction control signal input 2.
24	MREQ	O	MD microprocessor send request signal output for system control interface.
25	DRIVE	O	EFM driver ON/OFF signal output.
26	—	—	Not used.
27	—	—	
28	—	—	
29	—	—	
30	—	—	
31	—	—	
32	—	—	
33	—	—	
34	—	—	
35	—	—	
36	—	—	
37	MP	—	Connected to VSS.
38	SRST	I	MD microprocessor reset signal input.
39	DGND	—	Connected to VSS.
40	XTALO	O	External system clock oscillation crystal connection terminal 1.
41	XTALI	I	External system clock oscillation crystal connection terminal 2.

Pin No.	Pin Name	I/O	Description
42	ARDY	I	Ready signal input for system control interface.
43	SIN	I	Serial data input for system control interface.
44	SOUT	O	Serial data output for system control interface.
45	ACLK	O	Serial clock output for system control interface.
46	XLAT	O	CXD2652 interface latch signal output.
47	XRST	O	CXD2652 reset signal output.
48	XSTBY	O	CXA2523 standby signal output.
49	—	—	Not used.
50	AVSS	—	Connected to VSS.
51	AVREF	—	Connected to VDD.
52	AVDD	—	
53	—	—	Not used. (PLL UP)
54	—	—	
55	—	—	
56	SLF	—	
57	SRF	—	
58	TEMP	—	
59	MAGIC	—	
60	—	—	
61	TEST	—	
62	DISCPRO	I	DISC write-protection switch input.
63	MNT3	I	CXD2652 monitor signal input 3.
64	MNT2	I	CXD2652 monitor signal input 2.
65	MNT1	I	CXD2652 monitor signal input 1.
66	MNT0	I	CXD2652 monitor signal input 0.
67	SENS	I	CXD2652 SENS signal input.
68	FLG	I	The terminal monitoring the flag included in the SRDT of the CXD2652 interface.
69	—	—	Not used.
70	—	—	
71	P-CONT	—	
72	RFSW	—	
73	—	—	
74	—	—	
75	DQSY	I	DIGITAL-IN SUB-Q sync input.
76	XINT	I	CXD2652 status sync input.
77	SRDT	I	CXD2652 interface serial data input.
78	SWDT	O	CXD2652 interface serial data output.
79	SCLK	O	CXD2652 interface serial clock output.
80	SQSY	I	SUB-Q, ADIP sync input.
81	—	—	Not used.
82	—	—	

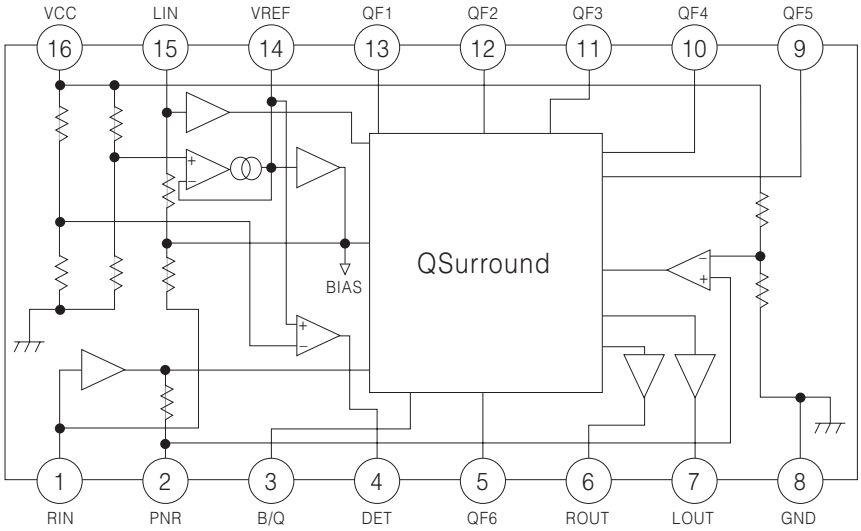
Pin No.	Pin Name	I/O	Description
83	—	—	Not used.
84	TXI	—	Connected to VSS.
85	TXO	—	Open. (Not used)
86	VSS	—	Connected to VSS.
87	VDD	—	Connected to VDD.
88	NC	—	
89	—	—	Not used.
90	DRVMUTE	O	BA5970FP mute signal output.
91	—	—	Not used.
92	—	—	
93	—	—	
94	—	—	
95	RECP	O	Laser power selection signal output.
96	TX	O	Record data output enable signal output.
97	MOD	O	RF modulation circuit ON/OFF signal output.
98	OPMUTE	O	Laser mute signal output.
99	ARST	O	AK4512 reset signal output.
100	DENF	O	De-emphasis ON/OFF signal output.

IC BLOCK DIAGRAM

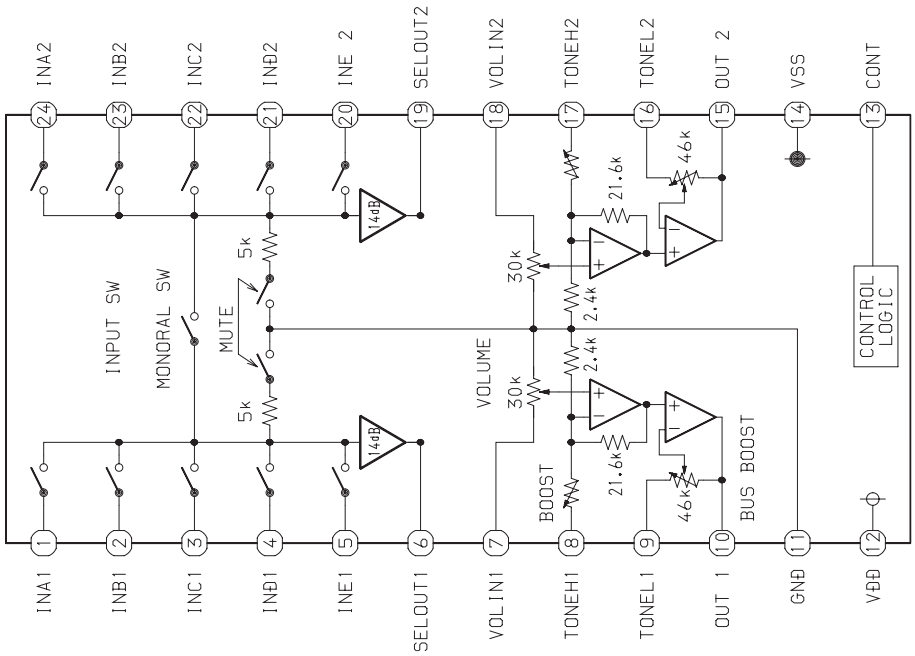
IC, BA3880FS



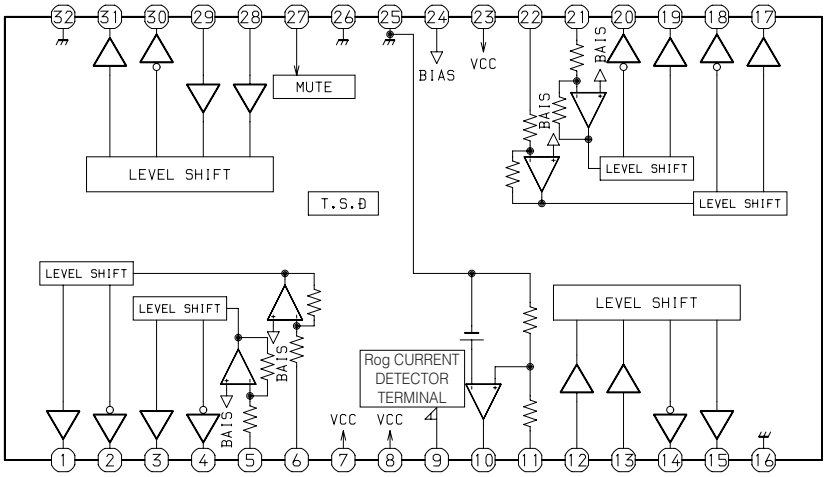
IC, MM1454XFBE



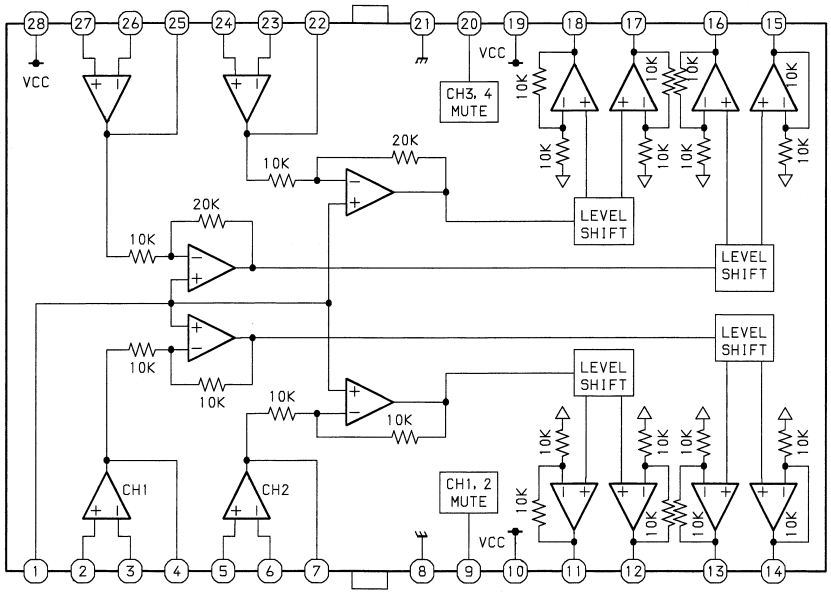
IC, M62495FP



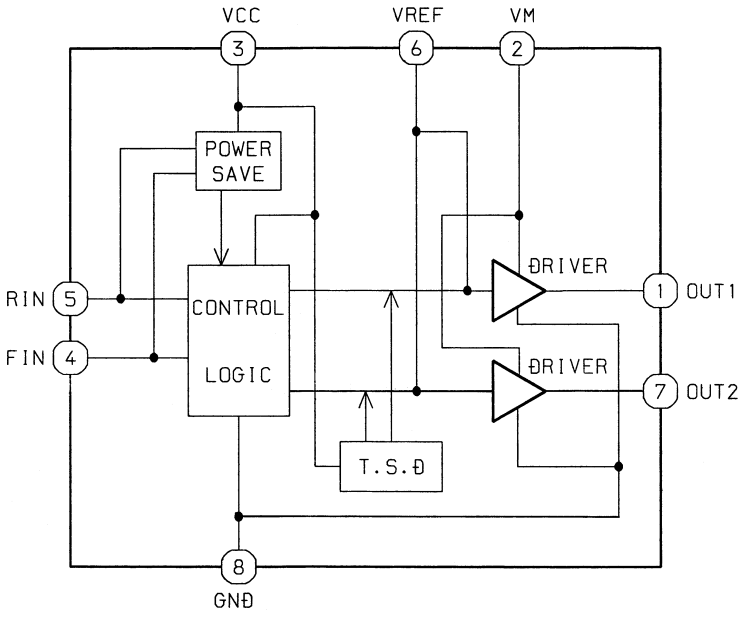
IC, BA5936



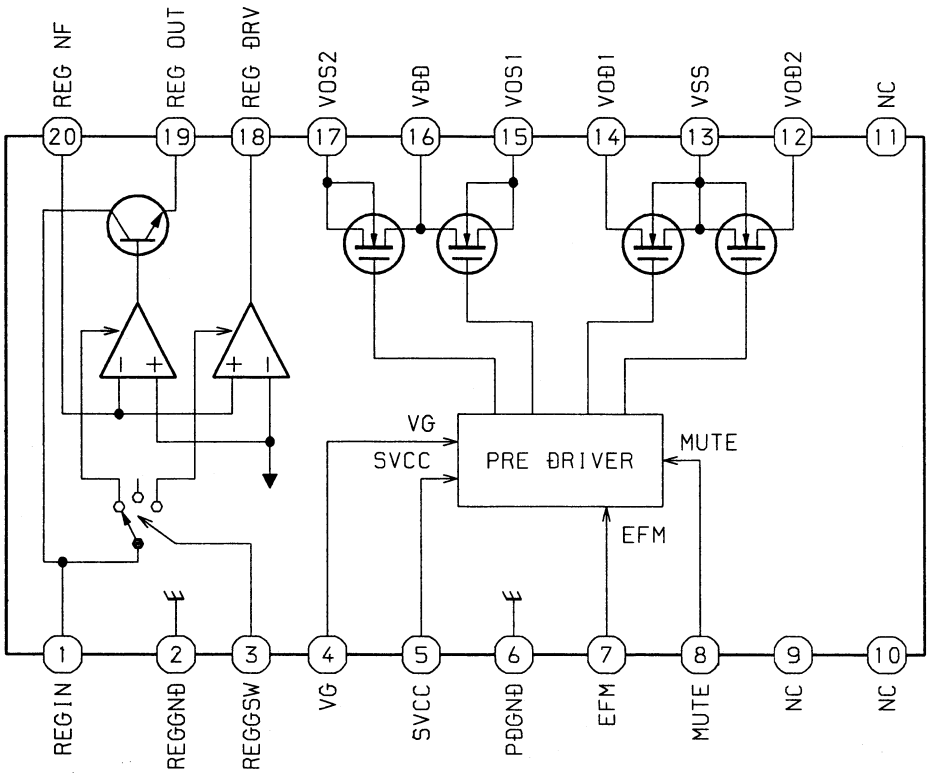
IC, BA5970FP



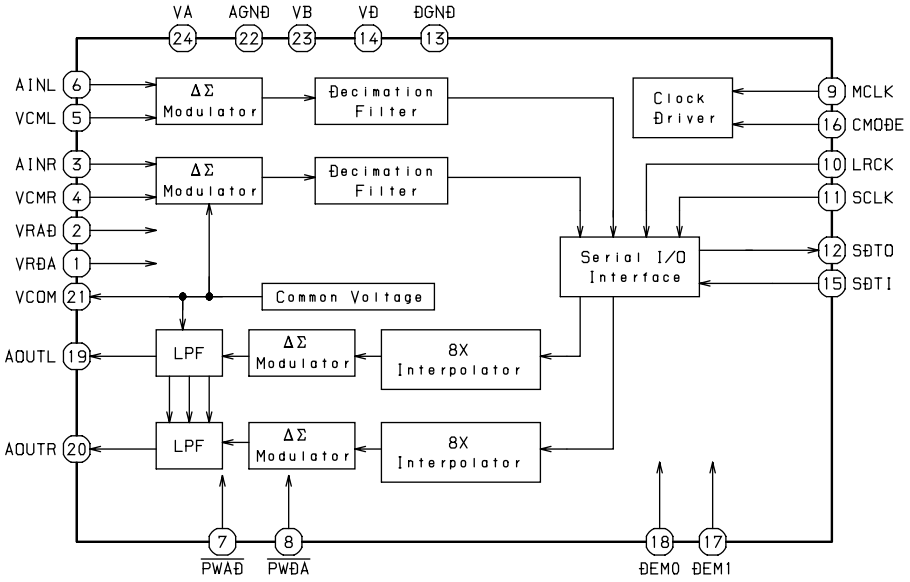
IC, BA6417F

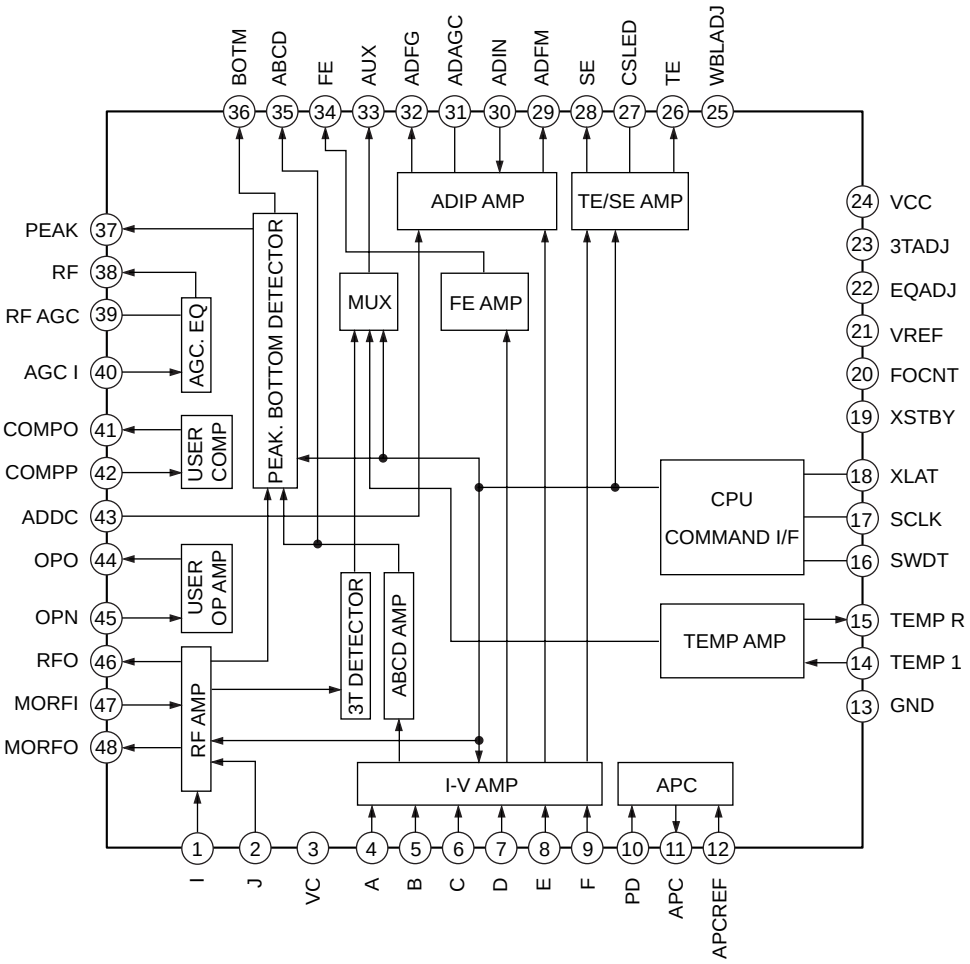


IC, BD7910FV

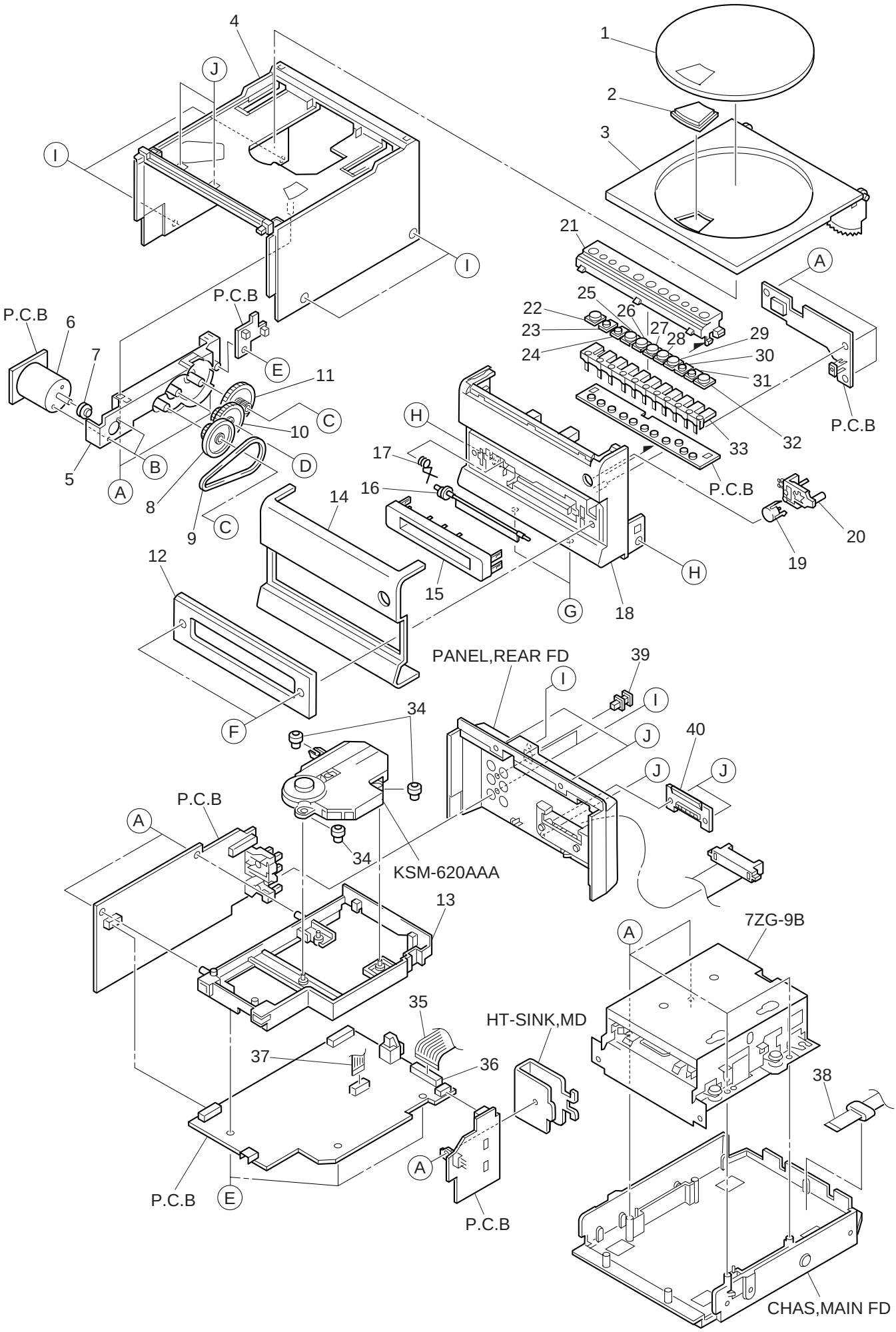


IC, AK4519VF




BOTM
ABCD
FE
AUX
ADFG
ADAGC
ADIN
ADFM
SE
CSLED
TE
WBLADJ
36
35
34
33
32
31
30
29
28
27
26
25
ADIP AMP
TE/SE AMP
PEAK
RF
RF AGC
AGC I
COMPO
COMPP
ADDC
OPO
OPN
RFO
MORFI
MORFO
37
38
39
40
41
42
43
44
45
46
47
48
AGC. EQ
USER COMP
USER OP AMP
RF AMP
PEAK. BOTTOM DETECTOR
MUX
FE AMP
3T DETECTOR
ABCD AMP
I-V AMP
APC
CPU COMMAND I/F
TEMP AMP
24
23
22
21
20
19
18
17
16
15
14
13
VCC
3TADJ
EQADJ
VREF
FOCNT
XSTBY
XLAT
SCLK
SWDT
TEMP R
TEMP 1
GND
1
2
3
4
5
6
7
8
9
10
11
12
I
J
VC
A
B
C
D
E
F
PD
APC
APCREF

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL PARTS LIST 1/1

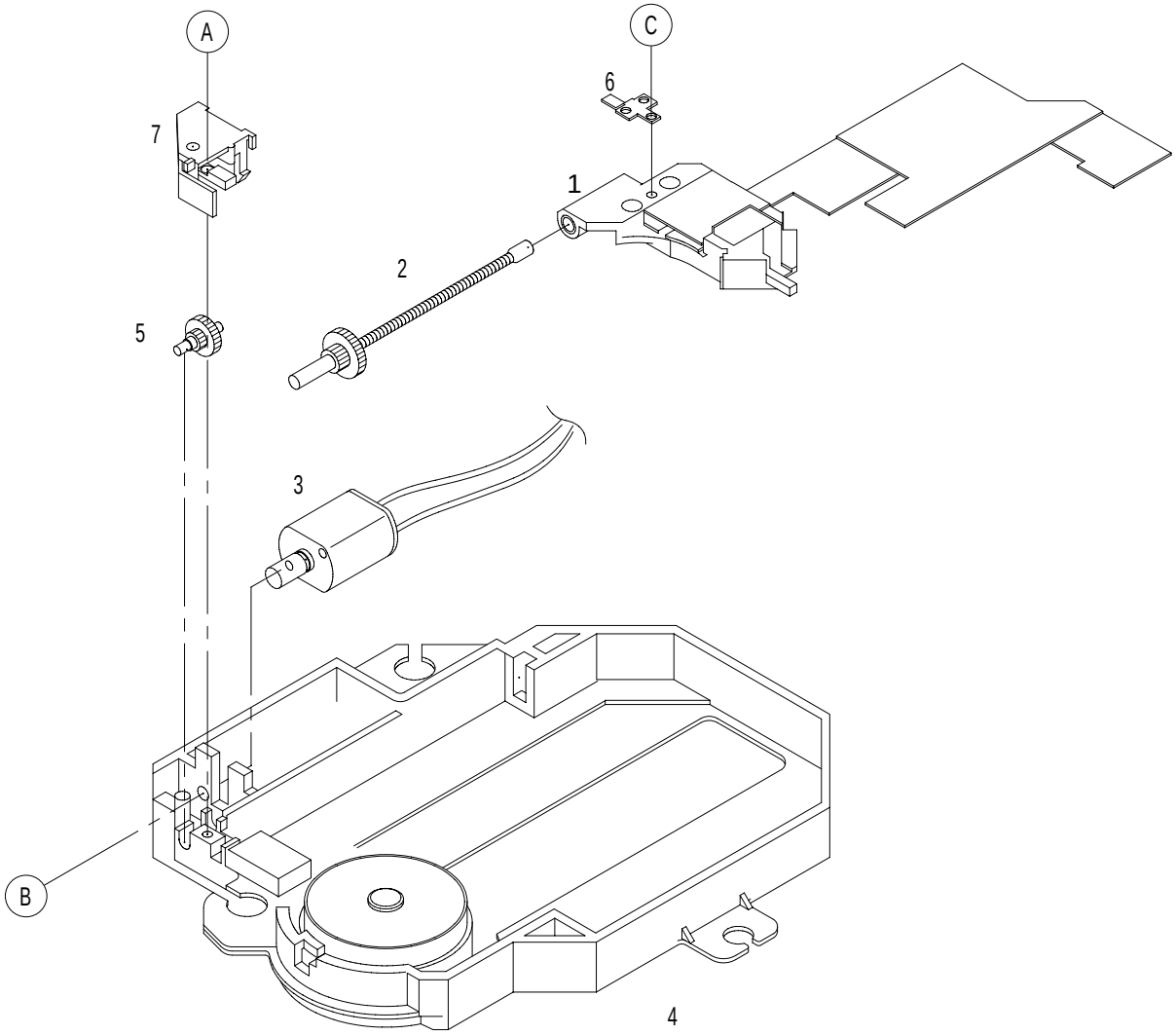
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-CL1-014-010		PANEL,CD
2	8Z-CL1-012-010		WINDOW,CD
3	8Z-CL1-004-010		CABI,TOP FD
4	8Z-CL1-007-010		BOX,CD
5	8Z-CL1-205-010		HLDR,GEAR
6	87-A91-069-010		MOT,RF-370CA15370
7	8Z-CL1-210-010		PULLEY,MOTOR
8	8Z-CL1-211-010		PULLEY,CD
9	8Z-CL1-212-010		BELT,CD
10	8Z-CL1-209-010		GEAR,B
11	8Z-CL1-208-010		GEAR,A
12	8Z-CL1-011-010		WINDOW,MD
13	8Z-CL1-202-010		CHAS,CD
14	8Z-CL1-009-010		PANEL,FR FD
15	8Z-CL1-015-010		PANEL,MD
16	88-CE2-012-010		PANEL,FLAP
17	88-CE2-209-010		SPR-T,MD
18	8Z-CL1-002-010		CABI,FR FD
19	8Z-CL1-028-010		CAP, EJECT
20	8Z-CL1-207-010		BTN,EJECT
21	8Z-CL1-013-010		PANEL,CONT
22	8Z-CL1-016-010		CAP, POWER
23	8Z-CL1-017-010		CAP, FUNC
24	8Z-CL1-018-010		CAP, REC
25	8Z-CL1-019-010		CAP, PAUSE
26	8Z-CL1-020-010		CAP, STOP
27	8Z-CL1-021-010		CAP, PLAY
28	8Z-CL1-022-010		CAP, REW
29	8Z-CL1-023-010		CAP, FF
30	8Z-CL1-024-010		CAP, DOWN
31	8Z-CL1-025-010		CAP, UP
32	8Z-CL1-026-010		CAP, OPEN
33	8Z-CL1-206-010		BTN,CONT
34	88-HV1-207-010		DMPR,MECHA
35	8Z-CL1-653-010		F-CABLE,19P 1.5 FG
36	87-A90-878-010		HLDR,WIRE 19P 1.5 51016
37	8Z-CL1-666-010		FF-CABLE, 8P 1.0
38	8Z-CL1-651-010		FF-CABLE, 14P 1.0
39	84-ZG1-245-210		CAP,OPTICAL
40	8Z-CL1-029-010		LID,CORD
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-261-092-210		V+3-4
C	87-761-096-410		VFT2+3-10 GLD
D	87-B10-162-010		VFT2+2-6
E	87-067-579-010		BVT2+3-8
F	8Z-CL1-034-010		S-SCREW,ZCL1
G	87-067-761-010		TAPPING SCREW, BVT2+3-10
H	87-721-095-410		QT2+3-8GLD W/O SLOT
I	87-744-095-410		UT2+3-8CR
J	87-B10-269-010		VT2+3-12

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

CD MECHANISM EXPLODED VIEW 1/1

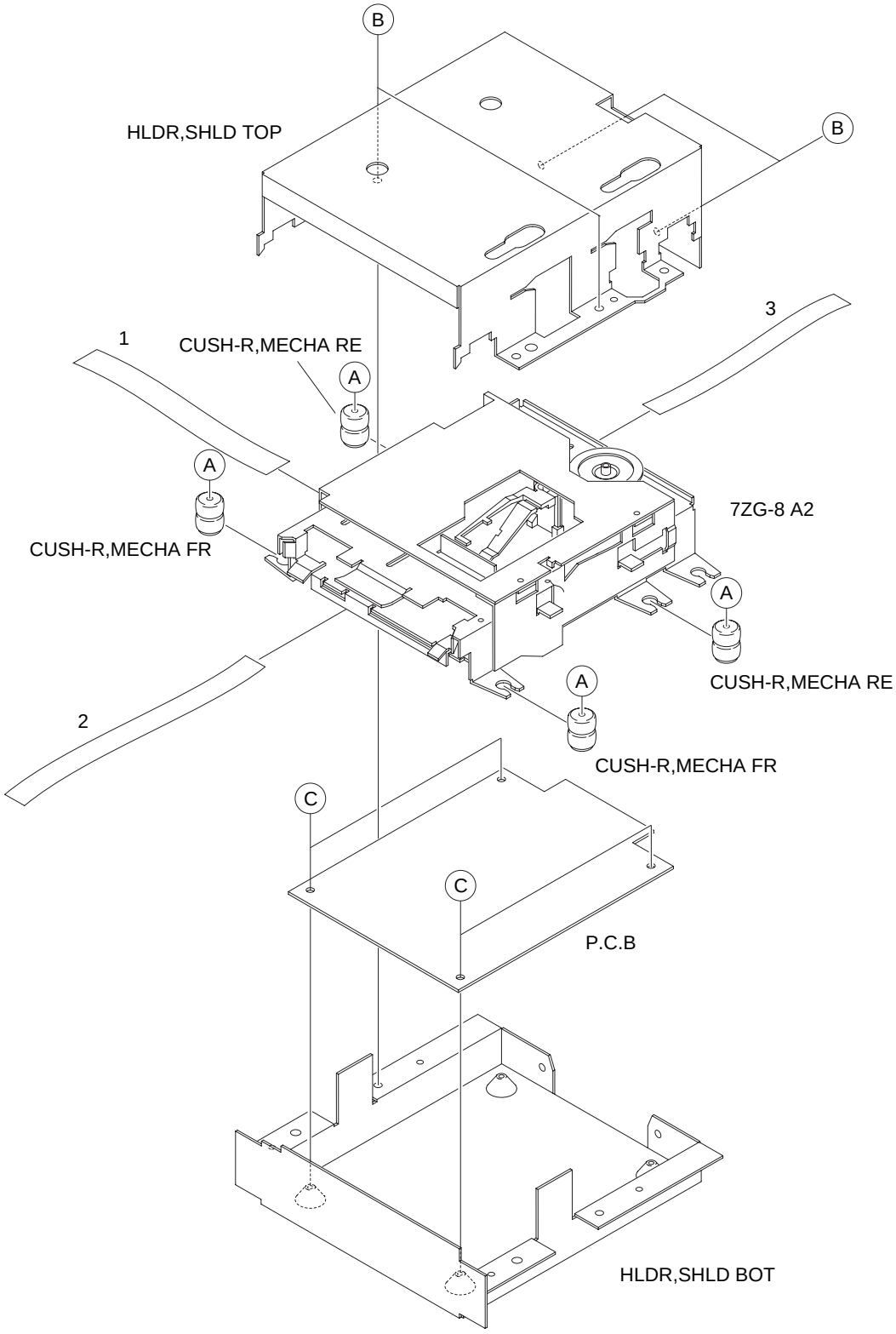


CD MECHANISM PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	98-820-063-030		KSS-620A(RP)
2	9X-264-638-910		SLED SCREW ASSY
3	9A-491-219-9A0		SLED MOTOR ASSY
4	9X-264-648-210		MD ASSY
5	92-627-751-020		GEAR BN
6	92-646-914-010		LACK SPRING
7	92-646-913-010		HOLDER
A	92-646-352-010		TAPPING SCREW B2-8
B	92-627-668-010		SCREW M2-2.5
C	92-646-358-110		TAPPING SCREW B1.7-4

MD MECHANISM EXPLODED VIEW 1/3

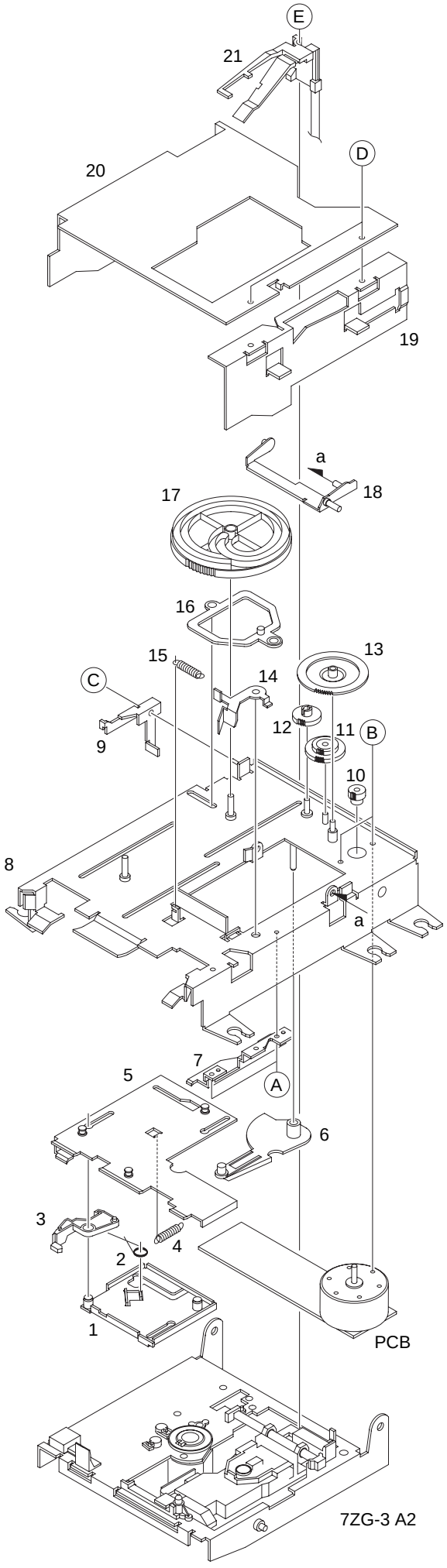


MD MECHANISM PARTS LIST 1/3

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZG9-602-010		FF-CABLE,21P 0.5 90MM
2	87-ZG9-603-010		FF-CABLE,8P 1.0 120MM
3	87-ZG9-604-010		FF-CABLE,5P 1.25 100MM
A	87-ZG9-209-010		S-SCREW,MD TF
B	87-067-020-010		VTT+3-4
C	87-067-421-010		VTT+2-4

MD MECHANISM EXPLODED VIEW 2/3

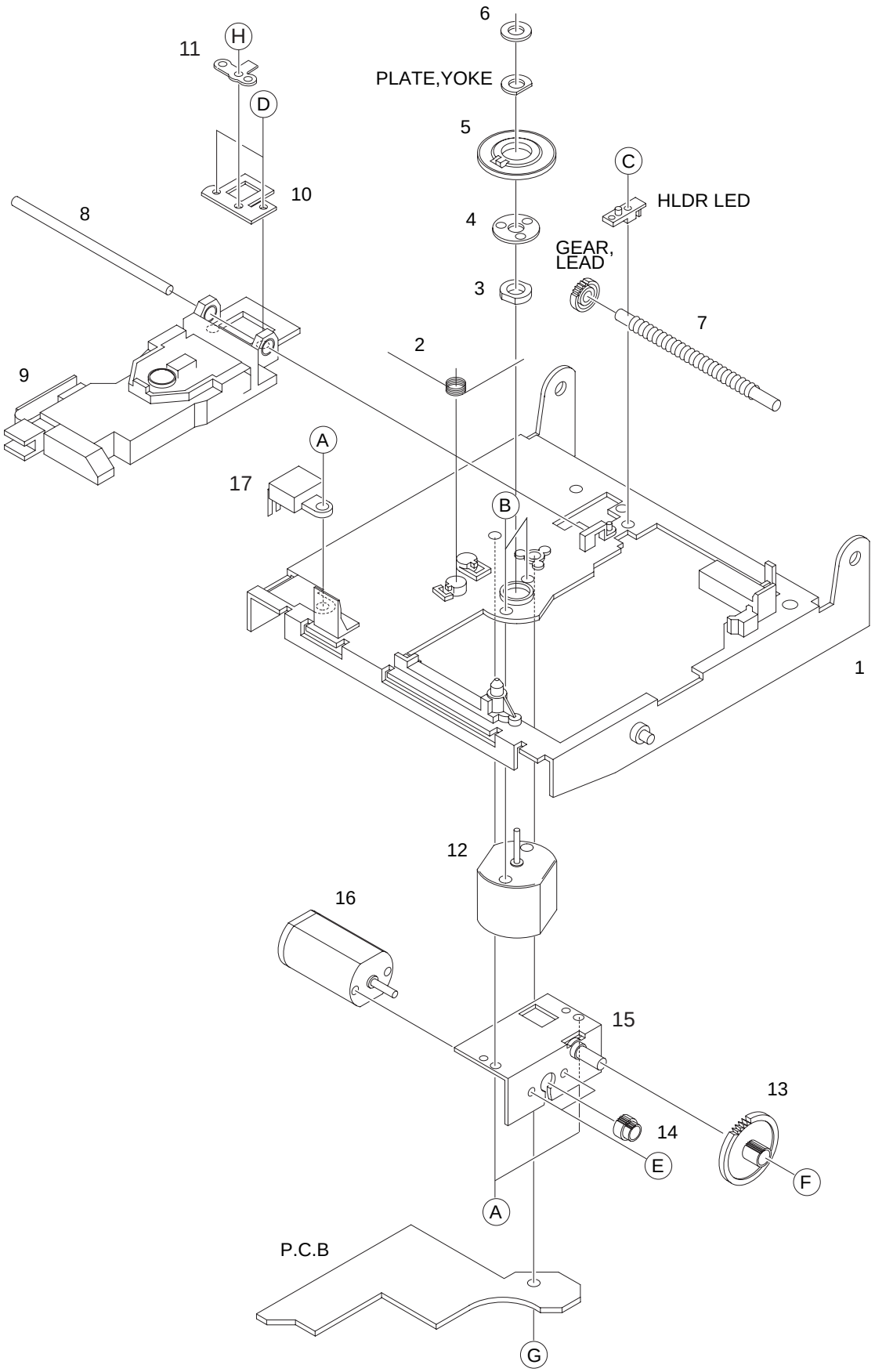


MD MECHANISM PARTS LIST 2/3

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZG8-220-110		PLATE ASSY,LATCH
2	87-ZG8-259-010		SPR-T,LATCH
3	87-ZG8-230-110		LEVER,LATCH
4	87-ZG8-224-110		SPR-E,LATCH
5	87-ZG8-214-210		HLDR ASSY,CARTRIGE
6	87-ZG8-233-110		LEVER,SW H
7	87-ZG8-255-210		PLATE,CARTRIGE
8	87-ZG8-201-710		CHAS ASSY,MAIN
9	87-ZG8-256-110		LEVER,SW S2
10	87-ZG8-242-010		GEAR,MOT
11	87-ZG8-253-010		GEAR,REDUCTION S3
12	87-ZG8-246-010		GEAR,IDLER 2
13	87-ZG8-252-010		GEAR,REDUCTION L3
14	87-ZG8-231-010		LEVER,SHUTTER
15	87-ZG8-232-110		SPR-E,SHUTTER
16	87-ZG8-225-310		LEVER ASSY,CAM
17	87-ZG8-239-110		CAM,LOAD
18	87-ZG8-257-210		LEVER ASSY,REC
19	87-ZG8-213-210		PLATE,SLIDE R
20	87-ZG8-209-210		PLATE ASSY,SLIDE L
21	87-A90-605-110		HEAD,OWH RF325-74A
A	87-B10-129-010		VTT+1.7-3.5 W/O MFZN2-C
B	87-B10-128-010		V+1.7-2 W/O MFZN2-C
C	87-B10-130-010		W-P,1.23-3.1-0.25 SLIT
D	87-067-421-010		VTT+2-4
E	87-B10-131-010		VW+1.7-5 W/O MFZN2C

MD MECHANISM EXPLODED VIEW 3/3



MD MECHANISM PARTS LIST 3/3

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

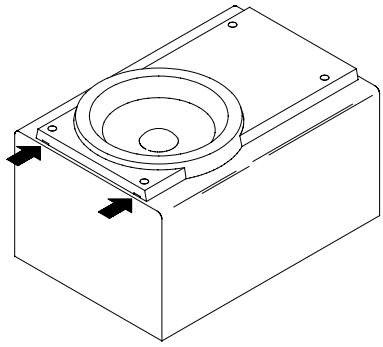
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	87-ZG3-202-510		CHAS ASSY,OUT-SERT
2	87-ZG3-214-210		SPR-T,SPINDLE-A
3	83-ZG5-308-010		BRG,1.5-2
4	83-ZG5-302-110		TURN TABLE,MD1
5	83-ZG5-305-210		SPR-P,DISC
6	83-ZG5-605-010		MAGNET,CHUCK
7	87-ZG3-212-110		SHAFT,LEAD
8	87-ZG3-211-010		SHAFT,GUIDE
9	87-A90-613-010		PICKUP,KMS-260A
10	87-ZG3-216-010		SPR-P,RACK
11	87-ZG3-213-010		SPR-P,LEAD
12	87-A90-413-010		MOT,FF-110PH 9
13	87-ZG3-206-010		GEAR,A
14	87-ZG3-205-010		GEAR,MOT SL
15	87-ZG3-208-010		HLDR ASSY,MOTOR
16	87-A90-616-010		MOT,FF-N30VA
17	87-A90-611-010		SW,PUSH 3-2-2 MPU20300MLB0
A	87-261-547-310		V+2-3 BLK (1)
B	87-263-523-310		SCREW, V+1.7-2
C	87-261-509-310		SCREW, V+1.4-4
D	87-067-393-010		SCREW +1.4-1.4
E	87-261-503-310		PRECISION SCREW, V+1.4-2
F	87-078-033-010		PW 1.2-2.5-0.25 SLT
G	87-341-035-210		SCREW,UT1+2-6
H	87-264-523-010		SCREW,V+1.7-2

MODEL NO. SX-LMD200

SPEAKER DISASSEMBLY INSTRUCTIONS

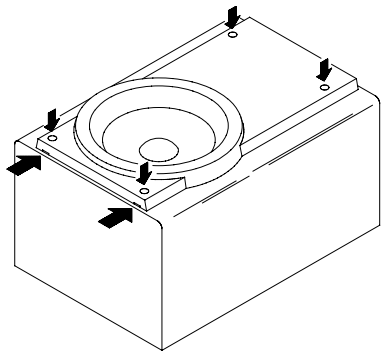
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit andthen remove the speaker units.



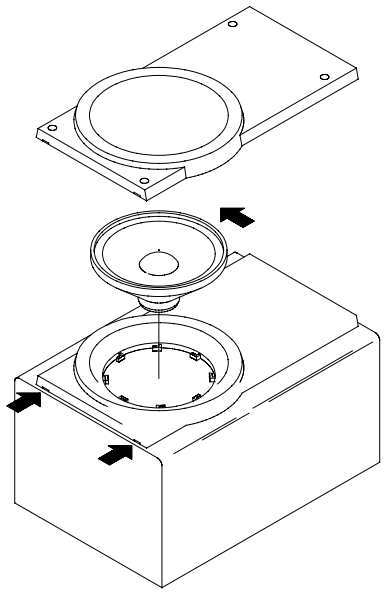
Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hold where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

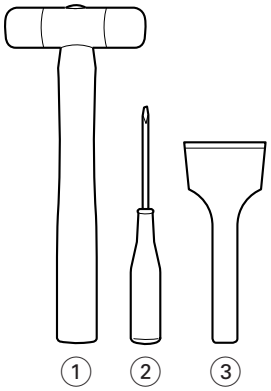


Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows arround speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turnning to clock-wise direction unitil "click" sound comes out.



Type.4



TOOLS

① Plastic head hammer
② (⊖) flat head screwdriver
③ Cut chisel

How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.

2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.

3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

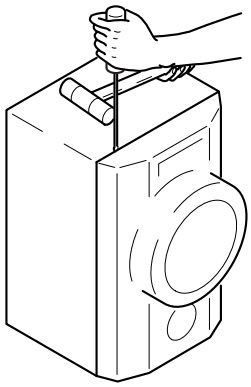


Fig-1

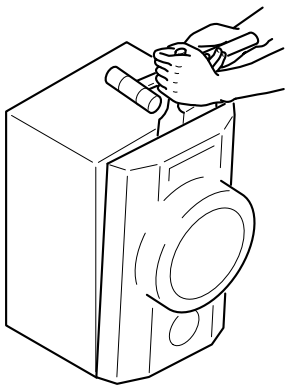


Fig-2

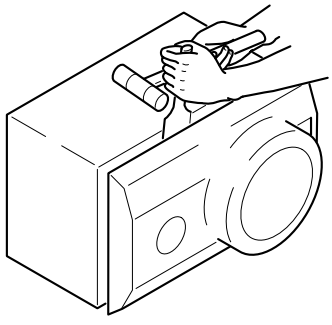


Fig-3

How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

SPEAKER PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-CP1-012-010		CORD,SP
2	8Z-CP1-006-010		GRILLE,FRAME ASSY<YJTN>
2	8Z-CP1-017-010		GRILLE,FRAME ASSY B<YJBN>
3	8Z-CP1-003-010		PANEL,FR<YJTN>
3	8Z-CP1-015-010		PANEL,FR B<YJBN>
4	8Z-CP1-005-010		PANEL,TW<YJTN>
4	8Z-CP1-016-010		PANEL,TW B<YJBN>
5	8Z-CP1-601-010		SPKR, W 100
6	88-CL1-937-010		SPKR,TW 25

サービス技術ニュース	
番号	連絡内容
G一　一	
G一　一	
G一　一	

アイワ株式会社 〒110　東京都台東区池之端1-2-11　☎03（3827）3111（代表）
AIWA CO.,LTD. 2–11, IKENOHATA 1–CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111

931196
Printed in Singapore